Health Care Financing Program Statistics

Medicare: Use of Short-Stay Hospitals by Aged and Disabled Inpatients, 1978

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Health Care Financing Program Statistics

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Medicare: Use of Short-Stay Hospitals by Aged and Disabled Inpatients, 1978

Prepared by Martin Ruther

Contribution by Herbert A. Silverman

Department of Health and Human Services
Health Care Financing Administration
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U.S. Department of Health and Human Services
Margaret M. Heckler, *Secretary*

Health Care Financing Administration
Carolyn K. Davis, Ph.D., *Administrator*

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Bryan R. Luce, Ph.D., *Director*
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Office of Research
Allen Dobson, Ph.D., *Acting Director*

Division of Beneficiary Studies
Marian Gornick, *Acting Director*

Program Statistics Branch
Herbert A. Silverman, *Acting Director*

Contents

	Page
Introduction	1
Purpose of the Report	1
Organization of the Report	1
Overall Structure of the Medicare Program	1
Methods of Measurement	1
Summary of Findings	2
Trends in the Use of Short-Stay Hospital Services Under Medicare, 1967-1978	2
Medicare Reimbursements for Short-Stay Hospital Services, 1967-1978	2
Use of Short-Stay Hospital Services by the Aged, 1978	2
Use of Short-Stay Hospital Services by the Disabled, 1978	3
Trends in the Use and Costs of Short-Stay Hospital Services Under Medicare, 1967-1978	4
Use of Short-Stay Hospital Services by the Aged, 1978	14
Charges and Reimbursements in Short-Stay Hospitals, 1978	18
Use of Short-Stay Hospitals by the Disabled, 1978	27
Charges and Reimbursements in Short-Stay Hospitals, 1978	29
Conclusion	37
Appendices	
A. The Statistical System of the Medicare Program	39
B. Provisions of the Law and Regulations	40
C. Sources and Limitations of Data	46
D. Reliability of Estimates	47
E. Definition of Terms	53

Tables

Table		Page
1	Number of Discharges, Days of Care, Charges, and Reimbursement of Aged and Disabled Enrollees, 1967-1978	5
2	Total Days of Care in Short-Stay Hospitals for the United States and Medicare Population, 1967-1978	9
3	Aged Enrollment, Short-Stay Hospital Discharges, Days of Care, and Average Length of Stay, by Demographic Characteristics, 1978	14
4	Percent Distribution of Aged Medicare Enrollment, Short-Stay Hospital Discharges, and Total Days of Care, By Region, 1978	15
5	Number and Percent Distribution of Discharges of Aged Enrollees from Short-Stay Hospitals, Days of Care, and Average Length of Stay, by Type of Hospital Control, 1978	15
6	Number and Percent Distribution of Discharges of Aged Enrollees from Short-Stay Hospitals, Days of Care, and by Bed Size, 1978	16
7	Number and Percent Distribution of Discharges of Aged Enrollees from Short-Stay Hospitals with Surgery, by Bed Size and Control, 1978	16
8	Number of Discharges of Aged Enrollees from Short-Stay Hospitals, Number with Surgery and Average Length of Stay with Surgery, by Demographic Characteristics, and Bed Size, 1978	17
9	Discharges by Death of Aged Enrollees from Short-Stay Hospitals by Age, Sex, and Race, 1978	18
10	Aged Enrollment, Discharges from Short-Stay Hospitals, Days of Care, Charges, and Reimbursements, by Demographic Characteristics, 1978	19
11	Number of Discharges of Aged Enrollees, Charges, and Reimbursements from Short-Stay Hospitals, by Length of Stay, 1978	21
12	Number of Discharges of Aged Enrollees, Days of Care, Charges, and Reimbursements from Short-Stay Hospitals, by Discharge Status, 1978	22
13	Number and Percent Distribution of Discharges of Aged Enrollees from Short-Stay Hospitals, Days of Care, Charges, and Reimbursements, by Bed Size and Control, 1978	23
14	Number of Discharged Aged Enrollees by Number of Stays and Age, Sex and Race, 1978	25
15	Number and Percent Distribution of Aged Persons Discharged from Short-Stay Hospitals, Number of Discharges, Days of Care, Charges and Reimbursements by Number of Stays, 1978	25
16	Enrollment of Disabled, Short-Stay Hospital Discharges, Days of Care, and Average Length of Stay, by Demographic Characteristics, 1978	26
17	Percent Distribution of Disabled Medicare Enrollment, Short-Stay Hospital Discharges, and Total Days of Care, by Region, 1978	27
18	Number and Percent Distribution of Disabled Enrollees Discharged from Short-Stay Hospitals, Days of Care, and Average Length of Stay, by Control, 1978	27
19	Number and Percent Distribution of Discharges of Disabled Enrollees from Short-Stay Hospitals, Days of Care, by Bed Size, 1978	28
20	Number and Percent Distribution of Discharges of Disabled Enrollees from Short-Stay Hospitals with Surgery, by Bed Size and Type of Control, 1978	28
21	Number of Discharges of Disabled Enrollees from Short-Stay Hospitals with Surgery and Average Length of Stay with Surgery, by Demographic Characteristics and Bed Size, 1978	30
22	Discharges by Death of Disabled Enrollees from Short-Stay Hospitals by Age, Sex, and Race, 1978	30
23	Enrollment of Disabled, Discharges from Short-Stay Hospitals, Days of Care, Charges and Reimbursements, by Demographic Characteristics, 1978	31
24	Number and Percent Distribution of Disabled Enrollees from Short-Stay Hospitals, Days of Care, Charges, and Reimbursements by Bed Size and Control, 1978	32

Tables

Table		Page
25	Number and Percent Distribution of Disabled Persons Discharged from Short-Stay Hospitals, Number of Discharges, Days of Care, Charges and Reimbursements by Number of Stays, 1978	33
26	Number of Discharged Disabled Enrollees by Number of Stays and Age, Sex, and Race, 1978	33
27	Number and Percent Distribution of Disabled Enrollees from Short-Stay Hospitals, Days of Care, Charges, and Reimbursements by Bed Size and Control, 1978	35
28	Number and Percent Distribution of Disabled Persons Discharged from Short-Stay Hospitals, Number of Discharges, Days of Care, Charges and Reimbursements by Number of Stays, 1978	36
29	Number of Discharged Disabled Enrollees by Number of Stays and Age, Sex, and Race, 1978	36

Introduction

Purpose of the Report

This report presents data on the use and cost of services short-stay hospitals provided to aged and disabled Medicare enrollees during 1978. This is the first report which presents data on the use of short-stay hospital services by both the aged and the disabled. Previously, separate reports were issued.

Eligible persons 65 years of age and over have been covered by Medicare's hospital insurance (HI) program since July 1, 1966. The Social Security Amendments of 1972 (P.L. 92-603), extended coverage on July 1, 1973 to persons who are entitled to Social Security disability cash benefits for 24 consecutive months and to most persons with end-stage renal disease (ESRD). In this report, persons with ESRD covered by Medicare are included among the disabled.

Trend data on the use and cost of short-stay hospital services are presented for the aged beginning in 1967, the first full year they were covered. For the disabled, trend data begin in 1974, their first full year of coverage.

Detailed data on the use and cost of hospital services are presented for 1978. Patterns of use by demographic characteristics of the patients, characteristics of the hospital, and by the occurrence of surgery or death during hospitalization are examined for aged and disabled enrollees.

Organization of the Report

This report has six sections. The remainder of this introduction gives a brief description of the Medicare program, and a description of measures of use of short-stay hospital services, and presents a summary of the major findings of this report.[1]

The second section discusses trends in the use of Medicare short-stay hospital benefits since 1967 including a comparison between aged and disabled enrollees. The third section provides a detailed examination of the use and cost data of short-stay hospital services by the aged in 1978. The fourth section makes the same examination for the disabled. The fifth section discusses the conclusions based on the data in this report. The sixth section consists of appendices describing the Medicare statistical system, summarizing the Medicare law and regulations, explaining sources and limitations of the data, and describing the sampling method used to produce the data in this report, and tables for estimating the reliability of data. Definitions of terms used in this report are also provided.

[1] A more detailed description of the program, including benefits under the hospital insurance program and enrollee eligibility requirements is found in Appendix B.

Overall Structure of the Medicare Program

Medicare consists of two separate but complementary insurance programs: hospital insurance and supplementary medical insurance (SMI). Hospital benefits are covered under the HI program. The HI program pays for part of the cost of inpatient hospital care and related health care services provided by skilled nursing facilities and home health agencies following a period of hospitalization. For the services to be covered, they must be provided by institutions and organizations which have been certified as qualified providers of services and which have signed an agreement to participate in the program.

The SMI program provides coverage for a variety of medical services and supplies furnished by physicians or others in connection with physician's services, home health services, and outpatient services. Dialysis services furnished on an ambulatory basis are covered as an outpatient benefit whether furnished in a hospital outpatient setting or in a "freestanding" dialysis facility. Individuals participate voluntarily in the SMI program. The SMI program is financed by premiums paid by enrollees and by funds provided by the Federal Government from general revenues.

Methods of Measurement

This report discusses two aspects of the use of short-stay hospital benefits: 1) the quantity of services used, measured by the numbers of discharges and days of care received by inpatients, and 2) the cost of the services received, measured by hospital charges and Medicare reimbursements.

To compare hospital use over time and between groups of enrollees, discharges and days of care are converted to discharges and days of care per 1,000 enrollees. The average length of stay (ALOS) comprises both the number of discharges and total inpatient days of care used by persons discharged. Hospital charges are used to compare the financial value of inpatient services to specific groups of patients. Charges are determined by accumulating the value placed by the hospital on the various services provided to the patient. Since charges are patient-specific, differences in charges are interpreted in this report as indicative of differences in the resources used (intensity of services) by groups with specified characteristics except residence. Because of regional differences in price levels and medical practices, differences in charge levels across the country cannot be taken as indicative of geographic differences in the resources used during hospitalization. No estimate of regional differences in the intensity of hospital care is provided as neither of the study's cost measures (charges and reimbursements), is suitable for this purpose.

This report was written in the Division of Beneficiary Studies, Office of Research. Data for this report were generated by the Medicare Statistical System which was designed and is maintained by the Statistical Programming Branch, Office of Statistics and Data Management, Bureau of Data Management and Strategy.

Hospital reimbursements, which represent the hospital's cost of providing services to the aggregate of Medicare patients, indicate the approximate distribution of medicare benefits to specified population groups and regional differences in the distribution of Medicare benefits. Hospital reimbursements are not patient-specific, whereas charges are. Reimbursements per covered day in this report indicate trends in hospital costs of delivering a day of care to Medicare patients, and also highlight the cost differences by type of hospital control and bed size.

Summary of Findings

Trends in the Use of Short-Stay Hospital Services Under Medicare, 1967-1978

Aged, 1967-1978

- Between 1967 and 1971 there was a rise and then a fall in hospital use, as measured by total days of care per 1,000 enrolled. By 1971, hospital use by the aged stabilized and remained stable through 1978, at about 3,700 days per 1,000 enrollees.

- Stability resulted from offsetting trends — rising discharge rates (from 268 per 1,000 enrollees in 1967 to 344 per 1,000 in 1978) and decreasing average length of stay per discharge (from 13.8 days in 1967 to 10.7 days in 1978).

Disabled, 1974-1978

- Total days of care per 1,000 enrolled used by the disabled rose 14 percent between 1974, the first full year disabled enrollees were eligible for Medicare, and 1977, then declined slightly in 1978.

- The rise resulted because discharge rates increased more rapidly than the ALOS declined.

Total Days of Care Used by Medicare Enrollees and National Use, 1967-1978

- Between 1967 and 1973, aged Medicare enrollees used about 32 percent of total days of care (TDOC) rendered in short-stay hospitals. With coverage extended to the disabled, the proportion of hospital days used by aged and disabled Medicare enrollees increased to 34 percent in 1974 and 37 percent in 1978.

Medicare Reimbursements for Short-Stay Hospital Services, 1967-1978

All Enrollees, 1967-1978

- Between 1967 and 1978, short-stay hospital reimbursements by Medicare rose from $2.8 billion to $15.8 billion, an average annual rate of 17.2 percent.

All Enrollees, Fiscal 1982 and 1985

- Based on actuarial projections, total Medicare short-stay hospital reimbursements will continue their rapid rise. Reimbursements may increase from $29.9 billion in fiscal year 1982 to $45.2 billion by fiscal 1985, an average annual rate of 14.8 percent.

Medicare Short-Stay Hospital Reimbursements by Source of Increase, 1967-1978

- Based on data from this report, increasing reimbursements per covered day were the main cause of the rise in Medicare short-stay hospital expenditures.

- Between 1967 and 1978, the sources of increase in total Medicare reimbursements for short-stay hospital services were:

Source of Increase	Percent Contribution to Increased Total Medicare Reimbursement
Reimbursement per Covered Day	81.5
Enrollment	17.3
Discharge Rate	13.7
ALOS (Covered)	-12.5
TOTAL	100.0

- Based on hospital reimbursements for services to the aged during the period from 1967 to 1978, about 58 percent of the increase in the amount reimbursed per covered day was due to the increased prices of goods and services used by hospitals to provide a day of care. The remaining 42 percent of the increase was due to the increased intensity of labor and nonlabor factors used to produce a day of care.

Use of Short-Stay Hospital Services by the Aged, 1978

Demographic Characteristics

- Hospital Use (TDOC rate):
- increased with age;
- was 10 percent greater for men than women;
- was 3 percent higher for whites than nonwhites;
- was highest in the Northeast and lowest in the West.

Hospital Control, ALOS, and Bed Size

- Average length of stay was highest (11.1 days) in voluntary nonprofit hospitals; lowest in government and proprietary hospitals (9.8 days).

- The ALOS increased with hospital bed size, from 8.4 days for hospitals under 50 beds to 12.8 days for hospitals with 750 or more beds.

- The proportion of discharges with surgery increased with bed size, from 18 percent for hospitals under 100 beds, to 41 percent for hospitals with 500 or more beds.

Surgery and Deaths in Hospitals, 1978

- One-third of the discharges among the aged involved surgery.

- Deaths in hospitals decreased from 9.8 percent of all discharges in 1967 to 6.6 percent in 1978. This decrease resulted from both a decline in deaths in hospitals per 1,000 enrolled and an increase in discharges per 1,000 enrolled.

Distribution of Charges and Reimbursements, 1978

- Total charges for aged enrollees discharged from short-stay hospitals were $19.5 billion in 1978. Medicare reimbursements (interim payment and retroactive settlements) were about $14.7 billion, or about 75 percent of charges. Charges comprising the inpatient hospital deductible, coinsurance, and other noncovered charges amounted to $1.3 billion and were payable by the enrollees or by complementary insurance. The remaining $3.5 billion in charges were nonrecoverable, representing for the most part, hospital "markups" beyond costs, as defined by Medicare regulations.

- Total charges per discharge were $2,397 and reimbursements per discharge were $1,714.

- Charges per day varied from $290 in the West to $199 in the South.

- The Northeast had the highest reimbursement per enrollee, $642; the South had the lowest, $516.

- Stays of 22 days or more were one-tenth of all discharges but accounted for about one-third of both total charges and reimbursements.

Surgery, Deaths, and Charges in 1978

- One-third of all discharges involved surgery, and accounted for nearly 39 percent of days of care, and 46 percent of charges. Charges per day for discharges involving surgery were $267; for discharges without surgery charges were $195 per day.

- Charges per discharge with surgery were $3,354 and $1,925 for discharges without surgery.

- Charges per discharge for those who died were $3,955; for those discharged alive charges averaged $2,287.

Persons Discharged, 1978

- There were 5.5 million aged persons discharged from short-stay hospitals in 1978. Of these persons, 20 percent had two discharges and 11 percent had three or more discharges.

- Out-of-pocket liability for HI deductibles, coinsurance, lifetime reserve days, and other noncovered charges increased from an average of $186 for persons with one stay in a year to $498 for persons with 3 or more stays.

Use of Short-Stay Hospital Services by the Disabled, 1978

Disabled Compared to the Aged

- The disabled used hospital services more than the aged.

- The TDOC rate for the disabled was 3,809 per 1,000 enrolled — 4 percent more than the rate for the aged which was 3,650 per 1,000 enrollees.

- Although the ALOS of 10.6 days for the aged was 8 percent higher than the disabled, the discharge rate of the disabled — 380 per 1,000 enrollees — was 12 percent higher than the 344 per 1,000 of the aged.

- Deaths in hospitals among the disabled were 3.3 percent of all discharges, only half the rate of discharges of the aged.

Use by Demographic Characteristics of the Disabled, 1978

- The TDOC rate of disabled women was nearly one-third higher than for disabled men. For the aged, use by men exceeded that of women by about 10 percent.

- For both the aged and the disabled, hospital use increased with age and was greater for whites than nonwhites.

Charges and Reimbursements, 1978

- Total charges for disabled enrollees discharged from short-stay hospitals in 1978 were $2.6 billion. Medicare interim reimbursements were 70 percent of charges, $1.8 billion.

- Charges per discharge were $2,417 and reimbursements per discharge were $1,685 for the disabled, both slightly higher than that of the aged.

Hospital Discharges by Person

- Nearly 37 percent of disabled persons discharged in 1978 had two or more discharges. The comparable figure for the aged was 31 percent.

- Disabled persons with multiple stays accounted for 63 percent of days of care and 64 percent of charges.

Trends in the Use and Costs of Short-Stay Hospital Services Under Medicare, 1967-1978

This section discusses trends in the use of short-stay hospital services by Medicare beneficiaries and trends in Medicare reimbursements for these services. It also analyzes the contributions of the program trends in utilization, enrollment, and *per diem* cost of hospital care to rising Medicare expenditures. Because of the major contribution made by the rising *per diem* costs for hospital care, this report examines the contributions of price inflation in the goods and services and their increased use by hospitals to provide a day of care. Finally, this section compares contributions of these factors to rising Medicare expenditures and their contributions to the rising hospital costs in the nation as a whole.

Hospital utilization by the aged and disabled showed similar patterns during the early years of their coverage under Medicare. Hospital use showed an initial surge followed by a decrease. Among the aged, the subsidence was followed by relative stability as measured by the days of care per 1,000 enrollees. In 1978, it was not yet clear that the disabled would show similar stability.

During the first two full years of the program, the TDOC rate among aged HI enrollees increased from 3,701 per 1,000 enrollees in 1967 to 3,947 in 1969 (Table 1 and Figure 1). From 1967 through 1969, the discharge rate for the aged increased (from 268 to 292 per 1,000 enrollees) (Figure 2) more rapidly than the ALOS rate declined (from 13.8 to 13.5 days) (Figure 3). During the years 1969 to 1971, the discharge rate for the aged remained virtually unchanged while the ALOS continued to decline (from 13.5 to 12.5 days). Consequently, the TDOC rate dropped to 3,670 per 1,000 enrollees in 1971. From 1971 through 1978, the two rates nearly offset each other resulting in a relatively stable TDOC rate. The discharge rate increased 16 percent from 294 to 340 per 1,000 enrollees and the ALOS decreased 14 percent, from 12.5 to 10.7 days. Overall, between 1967 and 1978, the discharge rate for the aged increased at an average annual rate of 2.2 percent while the ALOS decreased at an average annual rate of 2.3 percent. The TDOC rate was almost the same in 1978 (3,650 per 1,000 enrollees) as in 1967 (3,701 per 1,000) — a rate of decrease of only 0.1 percent per year.

TABLE 1

Number of Discharges, Days of Care, Charges, and Reimbursement of Aged and Disabled Enrollees, 1967-1978
(Discharges and Days of Care in Thousands; Charges and Reimbursement in Millions)

Calendar Year	Discharges		Days of Care				Mean Length of Stay (in Days)		Total Charges			Reimbursement			
			Total		Covered		Total	Covered							
	Number (in thousands)	Per 1,000 Enrolled	Number	Per 1,000 Enrolled	Number	Percent of Total Days	Per Discharge	Per Discharge	Amount	Per Discharge	Per Day	Amount	Per Discharge	Per Covered Day	Per Enrollee
							All Enrollees								
1967	5,228	268	72,146	3,701	68,487	94.9	13.8	13.1	$ 3,529	$ 675	$ 49	$ 2,760	$ 528	$ 40	$142
1968	5,641	285	77,846	3,938	75,589	97.1	13.8	13.4	4,406	781	57	3,509	622	46	177
1969	5,852	292	79,002	3,947	77,246	97.8	13.5	13.2	5,220	892	66	4,085	698	53	204
1970	5,951	292	77,363	3,800	75,578	97.7	13.0	12.7	5,886	989	76	4,481	753	59	220
1971	6,090	294	76,125	3,670	74,298	97.6	12.5	12.2	6,638	1,090	87	5,036	827	68	243
1972	6,380	302	77,198	3,656	75,284	97.5	12.1	11.8	7,401	1,160	96	5,576	874	74	264
1973	6,751	313	78,987	3,662	77,637	98.3	11.7	11.5	8,277	1,226	105	6,245	925	80	290
1974	7,637	319	87,494	3,657	86,148	98.5	11.5	11.3	10,470	1,371	120	7,830	1,025	91	327
1975	7,982	324	89,263	3,623	87,505	98.0	11.2	11.0	13,067	1,637	146	9,735	1,220	111	395
1976	8,470	335	93,315	3,686	91,577	98.1	11.0	10.8	15,906	1,878	170	11,772	1,390	129	465
1977	8,920	342	97,549	3,738	95,983	98.4	10.9	10.8	19,024	2,133	195	13,804	1,548	144	529
1978[1]	9,208	344	98,173	3,666	96,323	98.1	10.7	10.5	22,089	2,398	225	15,755	1,711	164	588
Average Annual Rate of Change, 1967-1978	5.3	2.3	2.8	.1	3.1	.3	-2.3	-2.0	18.1	12.2	14.9	17.2	11.3	13.7	13.9
							Aged								
1967	5,228	268	72,146	3,701	68,487	94.9	13.8	13.1	$ 3,529	$ 675	$ 49	$ 2,760	$ 528	$ 40	$142
1968	5,641	285	77,846	3,938	75,589	97.1	13.8	13.4	4,406	781	57	3,509	622	46	177
1969	5,852	292	79,002	3,947	77,246	97.8	13.5	13.2	5,220	892	66	4,085	698	53	204
1970	5,951	292	77,363	3,800	75,578	97.7	13.0	12.7	5,886	989	76	4,481	753	59	220
1971	6,090	294	76,125	3,670	74,298	97.6	12.6	12.2	6,638	1,090	87	5,036	827	68	243
1972	6,380	302	77,198	3,656	75,284	97.5	12.1	11.8	7,401	1,160	96	5,576	874	74	264
1973	6,751	313	78,987	3,662	77,637	98.3	11.7	11.5	8,277	1,226	105	6,245	925	80	290
1974	7,033	320	80,880	3,677	79,770	98.6	11.5	11.2	9,614	1,367	119	7,209	1,025	90	328
1975	7,258	324	81,592	3,631	80,135	98.2	11.2	11.0	11,853	1,633	145	8,859	1,216	111	394
1976	7,607	332	84,438	3,684	82,916	98.2	11.1	10.9	14,263	1,875	169	10,589	1,392	128	462
1977	7,927	338	87,323	3,720	86,013	98.5	11.0	10.8	16,892	2,131	193	12,297	1,551	143	524
1978[1]	8,147	340	87,535	3,650	85,957	98.2	10.7	10.6	19,524	2,396	223	13,967	1,714	162	582
Average Annual Rate of Change, 1967-1978	4.1	2.2	1.8	.1	2.1	.3	-2.3	-1.9	16.8	12.2	14.8	15.9	11.3	13.6	13.5
							Disabled								
1974	604	313	6,614	3,431	6,378	96.4	11.0	10.6	$ 856	$1,417	$129	$ 621	$1,029	$ 97	$322
1975	724	334	7,671	3,538	7,370	96.1	10.6	10.2	1,214	1,677	158	876	1,210	119	404
1976	863	361	8,877	3,711	8,661	97.6	10.3	10.0	1,643	1,905	185	1,183	1,371	137	494
1977	993	379	10,226	3,904	9,970	97.5	10.3	10.0	2,132	2,147	208	1,507	1,518	151	575
1978[1]	1,061	380	10,638	3,809	10,366	97.4	10.0	9.8	2,565	2,418	241	1,788	1,685	172	640
Average Annual Rate of Change, 1974-1978	15.1	5.0	12.6	2.6	12.9	.3	-2.4	-1.9	31.6	14.3	16.9	30.3	13.1	15.4	18.7

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

[1]Based on stay records recorded as of December 1979.

FIGURE 1
Annual Total Days of Care Per 1,000 Enrollees

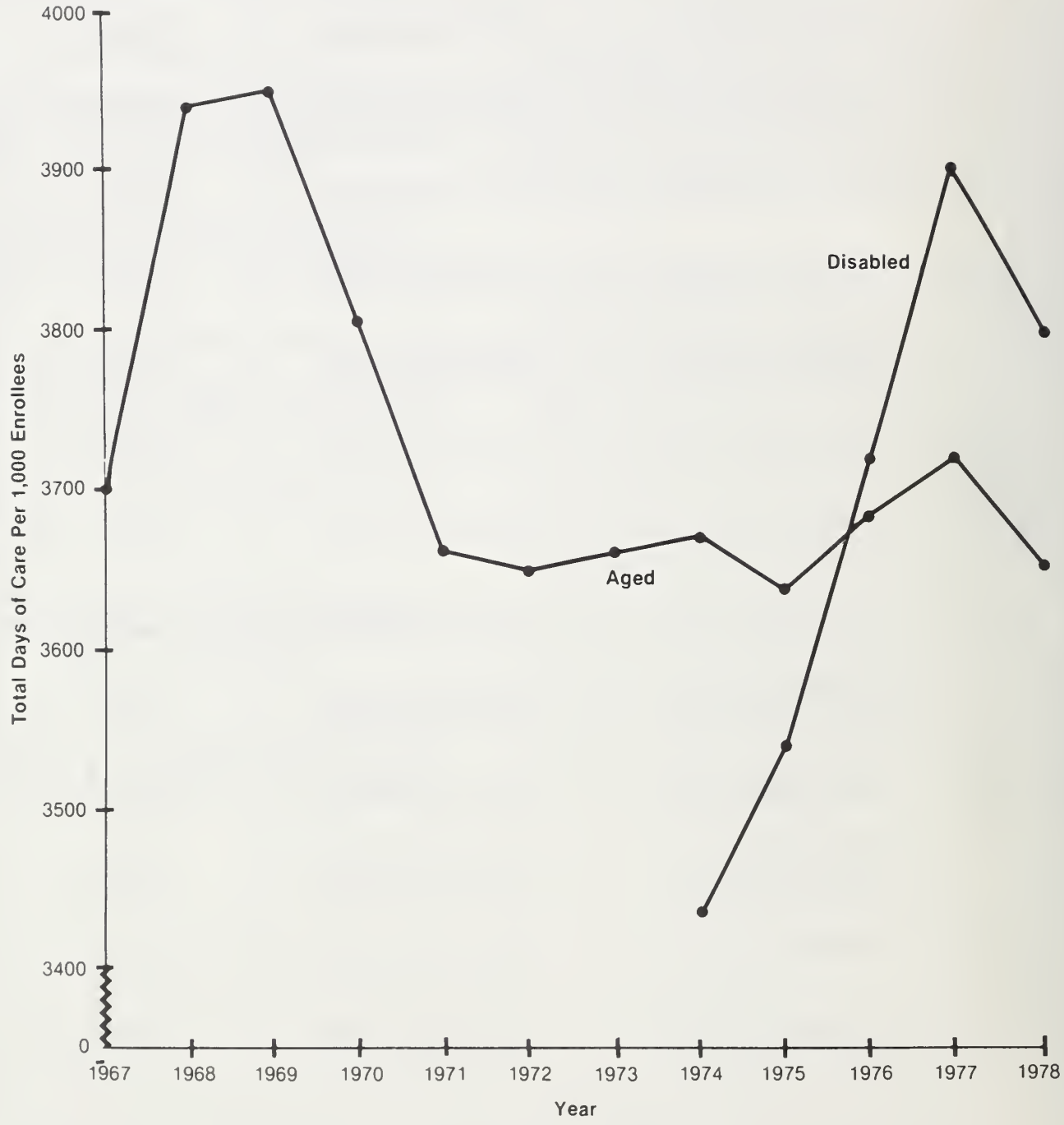


FIGURE 2
Annual Discharges Per 1,000 Enrollees

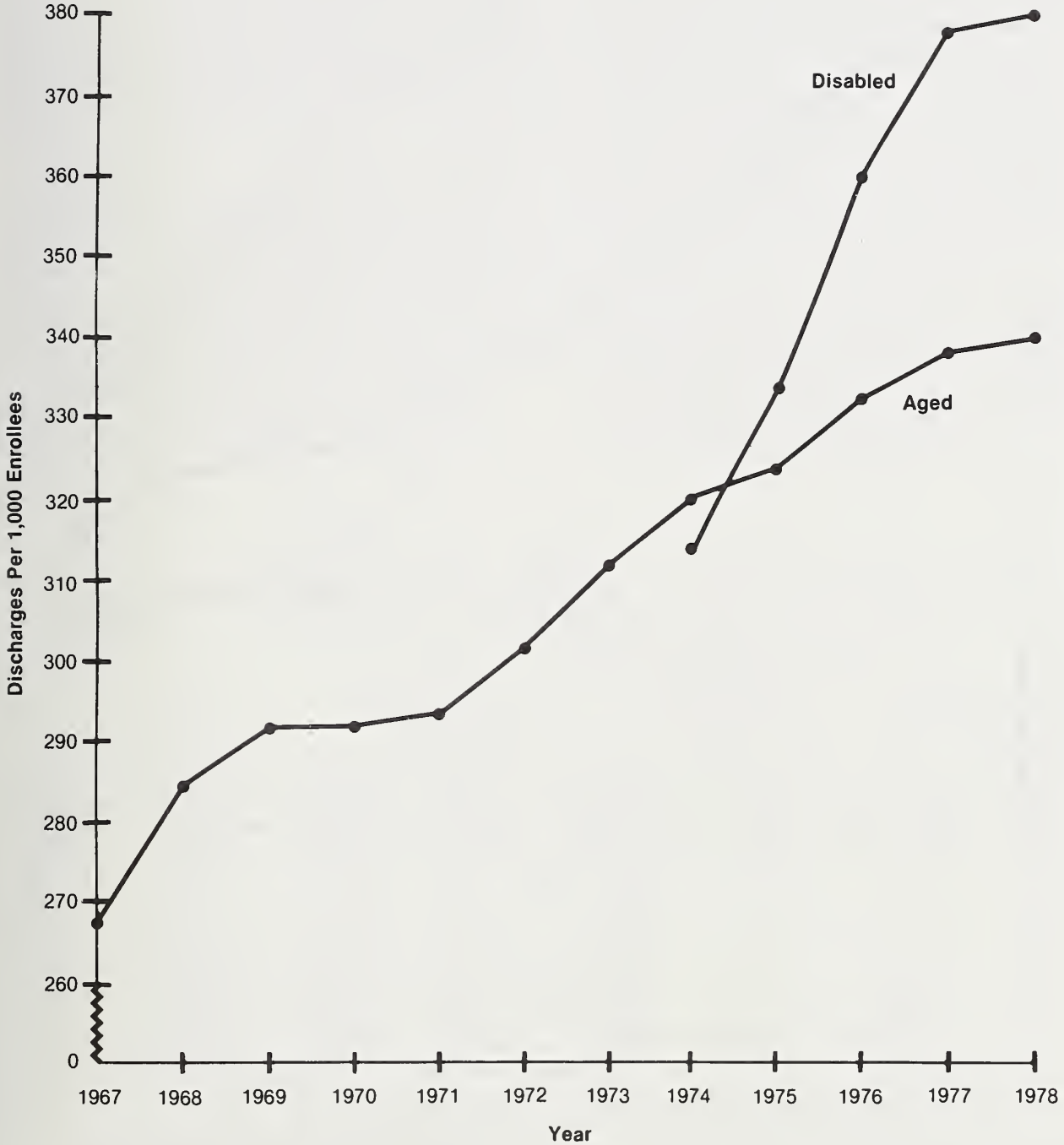
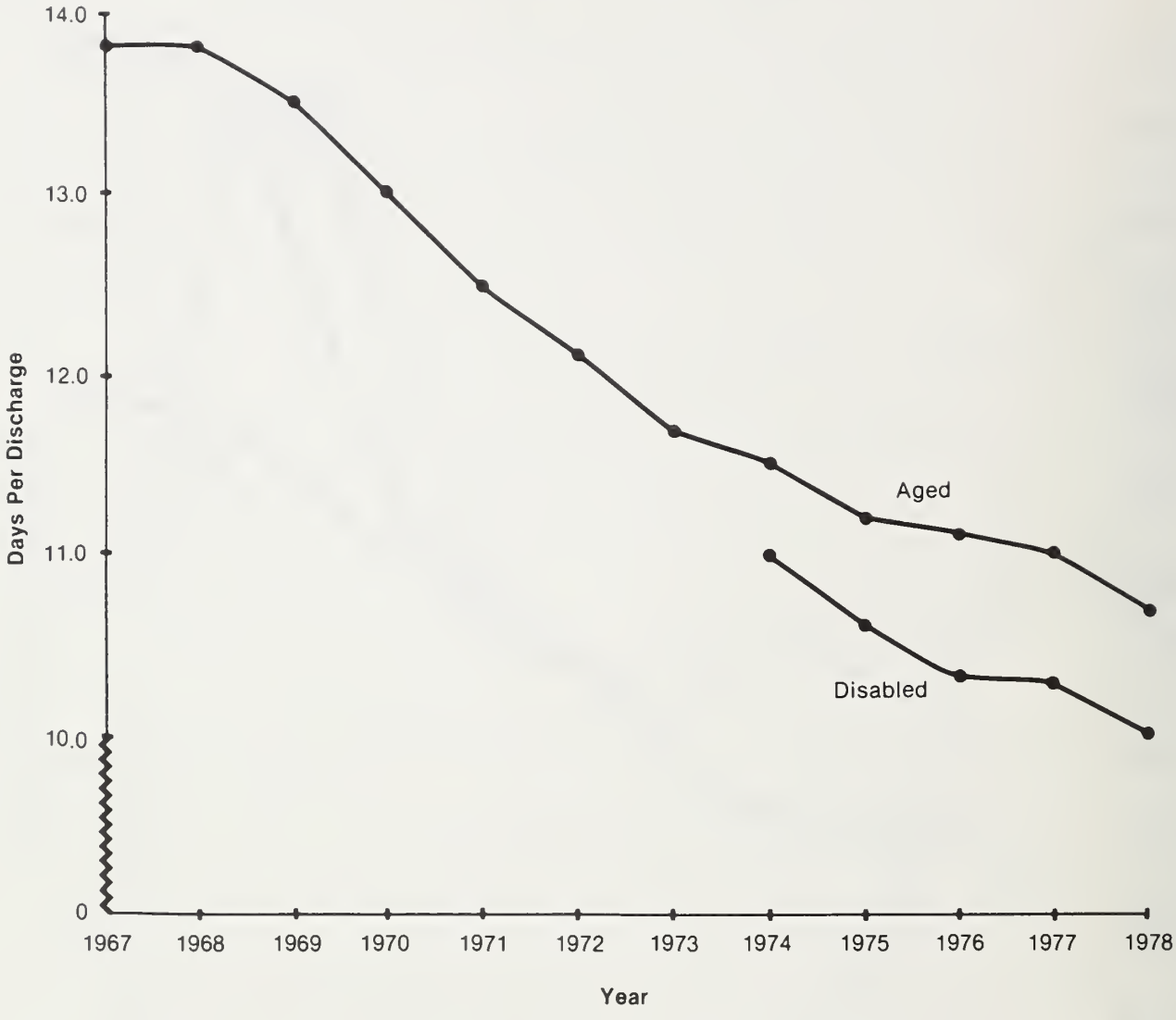


FIGURE 3
Average Length of Stay Per Discharge



The pattern for the disabled since 1974 resembles that of the aged during the early days of Medicare. From 1974 through 1977, the discharge rate increased more rapidly (from 313 to 379 per 1,000 enrollees) than the ALOS declined (from 11.0 to 10.3 days). This resulted in an increase of the TDOC rate from 3,431 per 1,000 enrollees in 1974 to 3,904 in 1977. The discharge rate remained virtually unchanged between 1977 and 1978 while the ALOS continued to decline (to 10.0 days). This resulted in the first year-to-year decrease in the TDOC rate, from 3,904 in 1977 to 3,809 in 1978. Overall, between 1974 and 1978, the discharge rate increased at an average annual rate of 5.0 percent while the ALOS decreased at a 2.4 percent annual rate. Thus, the TDOC rate increased at an average rate of 2.6 percent per year.

Although the patterns of hospital use by the aged and disabled from initial coverage under Medicare are similar, the overall pattern very much reflects that shown by the aged since the number of aged persons covered by HI (24.0 million in 1978) has been about 9 to 10 times greater than the number of covered disabled persons (2.8 million in 1978). Thus, between 1967 and 1978, the overall Medicare discharge rate increased at an average annual rate of 2.3 percent while ALOS declined at an average annual rate of 2.3 percent with a slight decrease in the TDOC rate of 0.1 percent. However, as will be shown in the following section, the extension of Medicare coverage to the disabled increased the quantity of inpatient hospital days used by Medicare HI enrollees to a significant degree.

Days of Care Used by Medicare Enrollees Compared to National Use, 1967-1978

Table 2 shows that Medicare enrollees use a significant proportion of the services furnished in non-Federal community short-stay hospitals in the U.S. From 1967 to 1973, aged Medicare enrollees accounted for about 32 percent of all days of care rendered in these hospitals, while constituting about 11 percent of the U.S. population. During this period the number of days of care used by the aged HI enrollees increased from 72.1 to 79.0 million days, an average annual increase of 1.5 percent. The extension of coverage to the disabled significantly increased the number of days used by Medicare enrollees.

In 1974, the first full year of coverage of the disabled, the proportion of short-stay hospital days used by Medicare HI enrollees increased to 34.1 percent from 31.9 percent for the aged in 1973. By 1978, Medicare enrollees accounted for over 98 million inpatient days, 37.4 percent of the national total, while constituting about 12 percent of the U.S. population.

TABLE 2
Total Days of Care in Short-Stay Hospitals for the United States and Medicare Population, 1967-1978 (in thousands)

Year	All Inpatient Days of Care [1]	Medicare Inpatient Days of Care					
		All Enrollees		Aged Enrollees		Disabled Enrollees [3]	
		Total	Percent of All Inpatient Days	Total	Percent of All Inpatient Days	Total	Percent of All Inpatient Days
1967	224,000	72,146	32.2	72,146	32.2	NA	NA
1968	229,118	77,846	34.0	77,846	34.0	NA	NA
1969	234,508	79,002	33.7	79,002	33.7	NA	NA
1970	239,866	77,363	32.3	77,363	32.3	NA	NA
1971	241,136	76,125	31.6	76,125	31.6	NA	NA
1972	243,138	77,198	31.8	77,198	31.8	NA	NA
1973	247,736	78,987	31.9	78,987	31.9	NA	NA
1974	256,955	87,494	34.1	80,880	31.5	6,614	2.6
1975	258,096	89,263	34.6	81,592	31.6	7,671	3.0
1976	262,324	93,315	35.6	84,438	32.2	8,877	3.4
1977	261,083	97,549	37.4	87,323	33.4	10,226	3.9
1978 [2]	262,770	98,173	37.4	87,535	33.3	10,638	4.0

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

[1] American Hospital Association, 1978 Edition.

[2] Based on stay records recorded as of December 1978; they represent about 99 percent of all stay records for 1978.

[3] Coverage of the disabled under Medicare began July 1, 1973.

NA — Not applicable.

Between 1974 and 1978, the disabled increased their share of days used by Medicare enrollees. The rate of increase of days of care used by the aged between 1974 to 1978 increased faster than it did from 1967 to 1973 (an average annual rate of 2.0 percent). Days of care used by the disabled increased even faster with an average annual rate of 12.7 percent. As a result, the disabled increased their share of inpatient days used by Medicare enrollees from 7.6 percent in 1974 to 10.8 percent in 1978. A major factor in the increased share used by the disabled was the rapid increase in the number of disabled HI enrollees. Between 1974 and 1978, the HI enrollment among the disabled increased from 1.9 to 2.8 million, an average annual increase of 9.7 percent. Among the aged, HI enrollment increased from 22.0 to 24.0 million, an average annual increase of 2.2 percent. As a proportion of all HI enrollees, the disabled increased from 8.1 percent in 1974 to 10.4 percent in 1978.

Medicare Reimbursements for Short-Stay Hospital Services, 1967-1978[2]

During the period from 1967 to 1978, total Medicare reimbursements for short-stay hospital services to the aged and disabled increased from $2.8 billion to $15.8 billion, an average annual increase of 17.2 percent. Table 1 shows that since the extension of Medicare coverage to the disabled in 1974, hospital reimbursements accelerated. Between 1967 and 1973, short-stay hospital reimbursements on behalf of the aged increased at an average annual rate of 14.6 percent, from $2.8 billion to $6.2 billion (Figure 4). Between 1973 and 1978, the average annual rate of increase in reimbursements for the aged rose to 17.5 percent and total hospital reimbursements rose to $14.0 billion.[3]

Since coverage was extended to the disabled, their hospital reimbursements have increased even more rapidly than have the aged's. In 1974, reimbursements for the disabled, $621 million, accounted for 7.9 percent of the total Medicare reimbursements for short-stay hospital services of $7.8 billion. By 1978, the disabled accounted for 11.3 percent, $1.8 billion, of total hospital reimbursements of $15.8 billion. Short-stay hospital reimbursements for the disabled increased at an average annual rate of 30.3 percent between 1974 and 1978 (Figure 4).

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[2] This section was written with Herbert A. Silverman. Acknowledgement is made to Mark S. Freeland for providing generous assistance with the indices used to carry out the computations in this section.

[3] President Nixon imposed controls on the price of health care services when the Economic Stabilization Program (ESP) was instituted in August 1971. Some forms of price control for health services remained in effect until April 1974.

Total Medicare reimbursements are affected by utilization rates, the size of the enrolled population, and the average amount reimbursed per covered day. The relationship is shown in the following equation:

$$\text{Medicare Reimbursements} = \frac{\text{Discharges}}{\text{HI Enrollees}} \times \frac{\text{Covered Days}}{\text{Discharges}} \times \frac{\text{HI Enrollees}}{1} \times \frac{\text{Reimbursements}}{\text{Covered Days}}$$

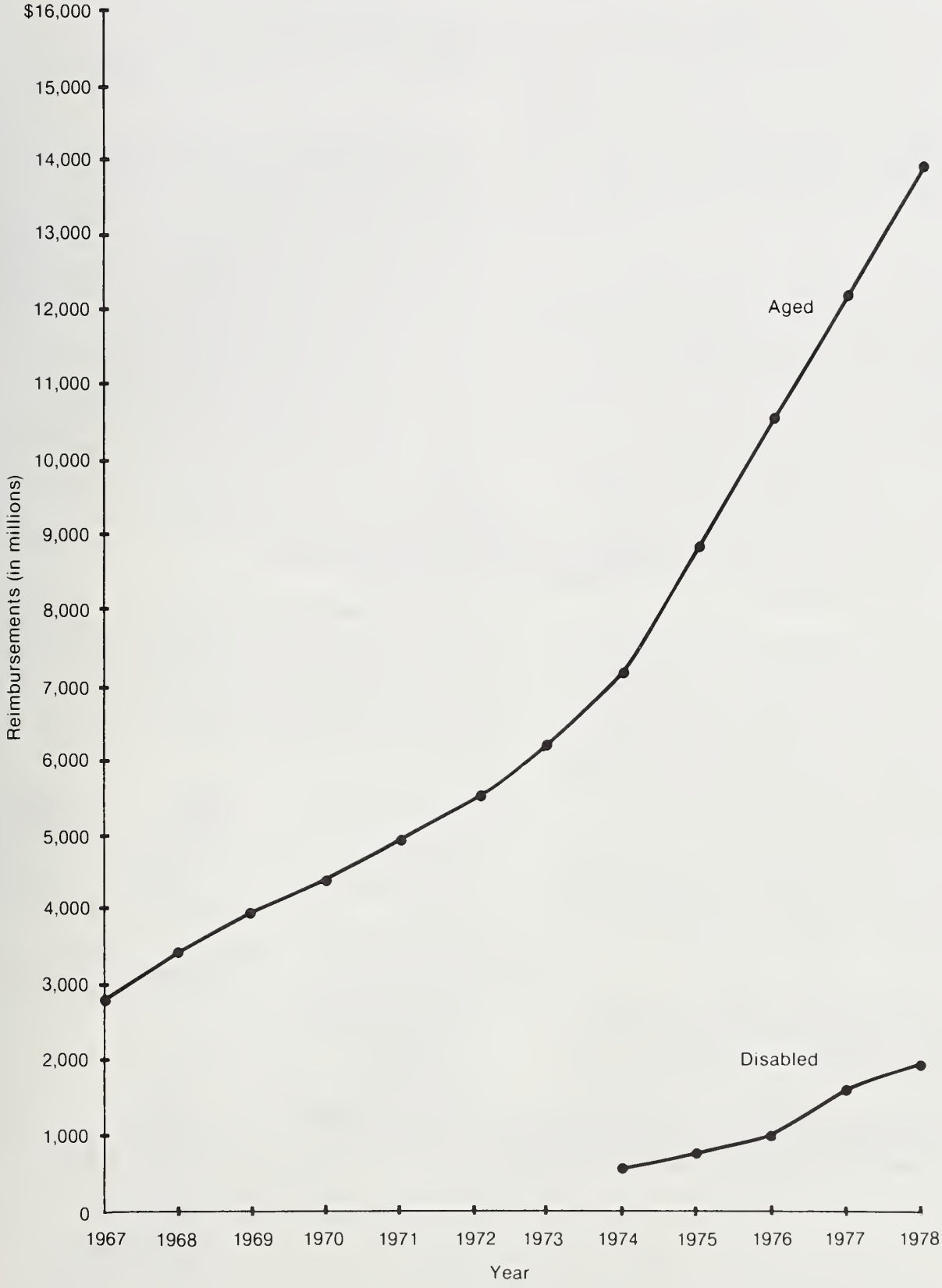
Relating this relationship to the experiences of the Medicare program, the percent contribution of these factors to increased reimbursements can be shown for the program as a whole and for the aged and disabled separately. (Klarman et al.)

	Total Medicare 1967-1978	Aged 1967-1978	Disabled 1974-1978
Discharge Rate	+ 13.7	+ 13.9	+ 17.8
ALOS (Covered)	- 12.5	- 12.0	- 7.1
HI Enrollment	+ 17.3	+ 12.0	+ 34.5
Reimbursement per Covered Day	+ 81.5	+ 86.1	+ 54.8
Total	100.0	100.0	100.0

The above figures show that rising costs per covered day was the major cause of rising Medicare reimbursements for short-stay hospital services to aged and disabled enrollees. For the disabled, however, rapid enrollment growth was also a significant contributing factor to rising reimbursements. Between 1974 and 1978, enrollment for the disabled increased at an average annual rate of 9.7 percent and accounted for 34.5 percent of the increase in hospital reimbursements during that period. In contrast, the aged enrollment had increased at an average annual rate of only 1.9 percent and contributed only 12 percent to the increased hospital reimbursements in the period 1967 to 1978. For both groups of enrollees, increased utilization rates accounted for a relatively small proportion of the increase in Medicare expenditures.

Although the period from 1967 to 1978 was marked by a high rate of price inflation in the American economy, rising prices was not the only factor contributing to the escalation of hospital costs. Increased *per diem* costs (measured here as reimbursement per covered day) reflect not only the rising prices of goods and services used by hospitals to produce a day of care, but also the intensity of services used. Over the period 1967 to 1978, there were changes in the amount and combinations of the production factors that produce an "average" day of hospital care. This phenomenon is generally referred to as increasing the "intensity of services" furnished by hospitals.

FIGURE 4
Medicare Reimbursements for Short-Stay Hospital Services to the Aged and Disabled, 1967-1978



Adapting the method developed by Freeland and Schendler to the methodology used above (Klarman), the separate effects of price and intensity changes on the rise in Medicare reimbursement per covered day (i.e., *per diem* hospital costs) for the aged between 1967 and 1978 can be shown by the following equation:

$$C_t = C_o \left(\frac{D_t}{D_o}\right)\left(\frac{HINP_t/D_t}{HINP_o/D_o}\right)\left(\frac{R_t}{R_o}\right)$$

Where:

C = Medicare reimbursement per covered day. The subscript "o" refers to a base year, in this case 1967, from which the rise in the reimbursement at a future time "t" is to be computed, in this case 1978.

D = Implicit price deflator for the gross national product for a given year. The ratio D_t/D_o measures the effect of general economy-wide inflation on the cost of a covered day of hospital care between the base year (1967) and the year of interest (1978).[4]

HINP = The national hospital input price index (Freeland et al.). When measured at two points in time, the index shows the change in prices for a fixed market basket of hospital inputs. The base year is 1977. When HINP is deflated by D, as is done in the equation, it measures the degree to which the rise in prices of hospital inputs exceeds the general level of price increases.

R = The residual category of factors contributing to the rising costs per day of hospital care after the effects of general price increases and increases in the hospital market basket prices are accounted for. This term measures changes in the quantity of the factors used by hospitals to provide a day of care. It includes changes in staffing patterns (labor-related) and in the number of diagnostic and therapeutic procedures used during a day of care and other changes in the mix of services (nonlabor-related). The quantity of labor and nonlabor factors used to provide a day of care is generally referred to as the "intensity of services."

Only the experiences of the aged are used in this analysis in order to keep a uniform base across the period of time being discussed. Applying the method used previously and distributing the "interaction" term proportionally to the known contributions of the individual factors, the increase in Medicare reimbursement per covered day of care for aged enrollees between 1967 and 1978 is attributable as follows:

General inflation	47.0 percent
Hospital market basket increases above general inflation rate	10.6 percent
Residual (or "intensity of services")	42.4 percent
	100.0 percent

The rapid increase in the *per diem* amount reimbursed by Medicare is almost equally attributable to the general effects of inflation and to the rise in the resources used to deliver a day of care. The greater rate of increases in the prices of the factors used by hospitals to furnish care accounted for only 11 percent of the rise in the amount paid by Medicare. Though controlling the inflation rate in the general economy would be a major first step to controlling the inflation in hospital costs, it should not divert attention from the rapid rate of increase in hospital costs that would still prevail. Over 40 percent of the increase in daily hospital costs between 1967 and 1978 arose from the increased resources used to produce an average day of care. It is this aspect of rising costs that can be addressed and subject to greater control efforts by hospital administrators, rate-setting bodies, and policymakers. This will be discussed further in relation to the labor and nonlabor components of these costs.

The factors contributing to the increase in Medicare hospital reimbursements on behalf of the aged between 1967 and 1978 are summarized below and are then compared to their contributions to the rising expenses in the non-Federal short-term general hospitals of the nation as a whole during the same period (AHA; Panel Survey).

	Medicare-Aged	AHA-National
Utilization rate	+ 1.9 %	+ 4.1 %
Discharge rate	+ 13.9%	+ 9.5%
ALOS (covered)	- 12.0%	- 5.4%
Enrollment	+ 12.0 %	+ 6.2 %
Reimbursement per covered day	+ 86.1 %	+ 89.7 %
General inflation	+ 40.5%	+ 44.5%
Hospital market basket increases above the general inflation rate	+ 9.1%	+ 10.1%
Residual ("intensity of services")	+ 36.5%	+ 35.1%
Total	100.0 %	100.0 %

[4] The GNP deflator is used because it is a more general indicator of price changes in the economy than is the consumer price index (CPI) which relates only to goods and services purchased by individuals and families.

The salient difference between the aged Medicare population and the general population is that during the period from 1967 to 1978, the number of aged Medicare enrollees increased at a rate double that of the nation as a whole. Although the increase in the utilization rate of the aged during this time contributed only a small portion of increased expenditures, when combined with the rapidly increasing numbers of aged persons, a significant increase in the use of hospital resources resulted. These differences are illustrated in Figure 5.

By use of data supplied by the American Hospital Association's monthly survey of community hospitals (AHA, Panel Survey), it is possible to make a direct estimate of the contributions made by increased intensity of labor and nonlabor inputs to the expenses per patient day. By deflating the AHA's data for payroll and nonpayroll expenses for the effects of price increases between 1967 and 1978, the remainder may be considered to be the effects of increased intensity of labor and nonlabor inputs, respectively. By this method, combined labor and nonlabor inputs increased at an average annual rate of 4.9 percent. Labor intensity per patient day increased at an average annual rate of 2.6 percent. The number of full-time equivalent employees per 100 patient-days in community hospitals increased from 241 in 1967 to 329 in 1978. Nonlabor related factors per patient day increased at an average annual rate of 7.9 percent. Of the increase in average expenses per patient day attributable to increased factor use, nonlabor-related factors accounted for 69.6 percent.[5]. The labor-related factors accounted for the remainder.[6]

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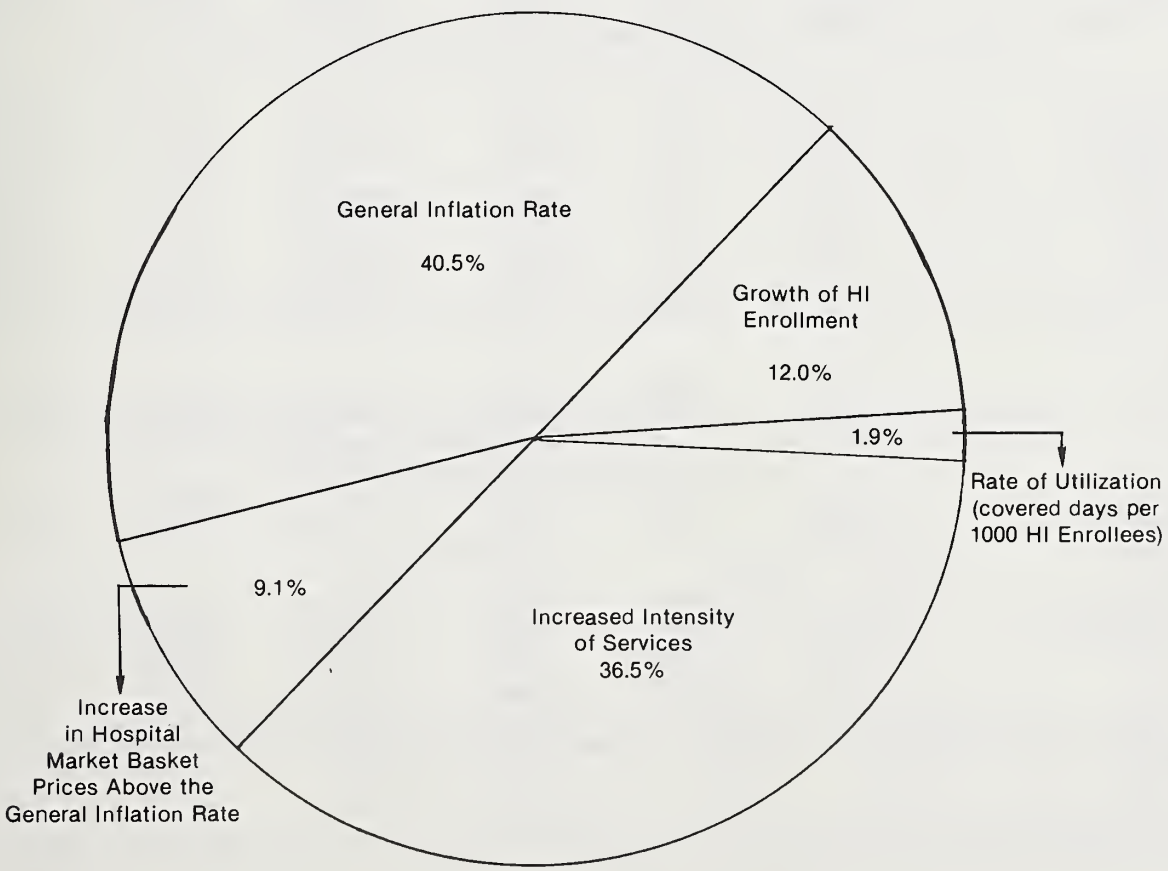
[5] The AHA data show a rapid rate of increase in hospitals, in nonpayroll expenses, which induce employee fringe benefits from $4.7 billion in 1967 to $30.0 billion in 1978. During the same period, payroll expenses increased from $7.9 billion to $29.8 billion. Thus, from 37.6 percent of total expenses in 1967, nonpayroll expenses increased to over 50 percent in 1978. If hospital expenses were recomputed to include employee fringe benefits as a labor expense, labor expenses in 1978 would be $34.4 billion and nonlabor costs would be $25.4 billion (Waldo, March 1982). Corresponding data for 1967 are not available. Indices used in computations of intensity changes took account of fringe benefits as nonpayroll costs.

[6] Because of cost apportionment procedures unique to Medicare, these proportions should be applied to the Medicare experience with caution. For instance, during most of the period between 1967 and 1978, a differential of 8.5 percent was added to nursing care costs apportioned to Medicare on the basis of the proportion of inpatient days used by aged HI enrollees. This adjustment was made to account for the added time required to care for an aged patient.

FIGURE 5
Sources of Increased Reimbursement For Short-Stay Hospital Services to Aged Medicare Enrollees, 1967-1978



Section 3. Use of Short-Stay Hospital Services by the Aged, 1978

The first part of this section presents data on the use of short-stay hospital services by the aged in 1978; specifically, data on discharges from short-stay hospitals by demographic characteristics of persons discharged, by type of hospital control, by bed size, and by surgical and life status at the time of discharge. The second part presents data on charges for hospital services and amounts reimbursed by Medicare.

Demographic Characteristics

Age: The TDOC rate increased with each successive age group (Table 3). The rate more than doubled with advancing age from 2,581 per 1,000 enrolled at age 65 and 66 to 5,522 per 1,000 at ages 85 and over. The increase in the TDOC rate reflects steadily rising discharge rates, 263 per 1,000 enrolled at 65 and 66 years to 465 per 1,000 at 85 and over and a rising ALOS, 9.8 to 11.9 days for the same age groups. With advancing age, enrollees are more likely to be hospitalized and for longer periods because their illnesses are more severe or their recovery is slower.

Sex: Women comprised 59 percent of the aged hospital insurance population but accounted for 56 percent of discharges (4.6 million for women vs. 3.6 million for men) and 57 percent of days of care (50.1 million to 37.4 million for men). The TDOC rate of men was 10 percent higher than that of women, 3,849 per 1,000 enrolled and 3,514 per 1,000 respectively. This was the result of a 16 percent greater discharge rate per 1,000 enrolled for men than women (370 and 319) but a 6 percent higher ALOS for women (11.0 days) than for men (10.4 days). These differences in use by sex held across all age groups. The rise in discharge rates per 1,000 enrollees for men increased from 288 for those 65 and 66 years of age to 531 for those 85 years and over, for women the increase ranged from 243 to 436 for the same age groups. For these age categories, the average length of covered stay for men ranged from 9.6 to 11.2 days and 9.7 to 11.7 days for women.[7]

[7] These differences by age and sex are shown in detailed general tables which are available upon request from the Bureau of Data Management and Strategy, Health Care Financing Administration, Room 2424 Oak Meadows Building, 1710 Gwynn Oak Avenue, Baltimore, Maryland 21207.

TABLE 3
Aged Enrollment, Short-Stay Hospital Discharges, Days of Care, and Average Length of Stay, by Demographic Characteristics, 1978
(Enrollment, Discharges, and Days of Care in Thousands)

Demographic Characteristics	HI Enrollment[1]	Discharges		Total Days of Care		Average Length of Stay
		Number	Per 1,000 Enrolled	Number	Per 1,000 Enrolled	
All areas[2]	23,984	8,147	340	87,535	3,650	10.7
United States	23,523	8,090	344	86,932	3,696	10.7
Age						
65 and 66	3,366	887	263	8,686	2,581	9.8
67 and 68	3,124	840	269	8,333	2,667	9.9
69 and 70	2,902	840	290	8,459	2,915	10.1
71 and 72	2,576	806	313	8,339	3,237	10.3
73 and 74	2,291	769	336	8,129	3,549	10.6
75-79	4,537	1,707	376	18,786	4,141	11.0
80-84	2,997	1,279	427	14,704	4,906	11.5
85 and over	2,191	1,019	465	12,099	5,522	11.9
Sex						
Men	9,728	3,595	370	37,446	3,849	10.4
Women	14,256	4,552	319	50,090	3,514	11.0
Race						
White	21,289	7,347	345	78,071	3,667	10.6
All Other	2,036	596	293	7,250	3,562	12.2
Region						
Northeast	5,730	1,739	304	22,998	4,013	13.2
North Central	6,361	2,318	364	25,346	3,985	10.9
South	7,530	2,804	372	27,761	3,687	9.9
West	3,882	1,228	316	10,817	2,786	8.8

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

[1] As of July 1, 1978

[2] Includes unknown race and unknown residence.

Race: The TDOC rate of whites exceeded that of all other races in 1978 by 3 percent (3,667 and 3,562 per 1,000, respectively). This small difference was the result of partly offsetting differences in the discharge rate and the ALOS. The discharge rate of whites in 1978 was 18 percent higher (345 per 1,000 enrolled) than all other races (293 per 1,000). This was offset by a 15 percent higher ALOS among all other races (12.2 days) than among whites (10.6 days). There has been a sizeable decrease in the difference in the TDOC rate by race since 1967. The rate of whites was 3,750 per 1,000 enrolled or 28 percent higher than for other races (2,927 per 1,000) in 1967 (Helbing). The drop in the difference in TDOC rates was largely due to a reduction in the difference in the discharge rate. In 1967 the discharge rate of whites was 275 per 1,000 enrolled or 40 percent greater than that of other races (196 per 1,000). The ALOS per discharge was higher for other races than for whites in every age group. The difference becomes progressively smaller with age, at ages 65-66 other races averaged 1.8 days more than whites but only 0.9 days at ages 85 and over.[8]

Region: There were substantial regional differences in the TDOC rate, the discharge rate, and the ALOS. The TDOC rate was highest in the Northeast (4,013 per 1,000) reflecting the highest ALOS (13.2 days) offsetting the lowest discharge rate (304 per 1,000) among the regions. In contrast the West had the lowest TDOC rate, 2,786 per 1,000, because of the lowest ALOS, 8.8 days, and a below average discharge rate, 316 per 1,000. The discharge rate varied 22 percent between the Northeast (304 per 1,000 enrolled) and the South (372 per 1,000). ALOS varied 50 percent, 8.8 days in the West and 13.2 in the Northeast. The TDOC rate ranged from 2,786 days per 1,000 enrolled in the West and 4,013 per 1,000 in the Northeast, a difference of 44 percent.

The South, with the largest proportion of HI enrollment, 31.4 percent, had the largest proportion of discharges, 34.4 percent, and days of care, 31.7 percent (Table 4). The West, with the smallest HI enrollment, 16.2 percent, had lower proportions of both discharges, 15.1 percent, and days of care, 12.4 percent.

Type of Hospital Control: Voluntary hospitals accounted for 71 percent or 5.8 million discharges of aged Medicare patients from short-stay hospitals in 1978 (Table 5). Government hospitals accounted for 20 percent (1.6 million) of the discharges of aged enrollees, and proprietary hospitals 9 percent (0.8 million). The proportion of TDOC in voluntary hospitals, 74 percent, was slightly higher than discharges, as ALOS, 11.1 days, was over a day longer than in other types of hospitals. The ALOS was highest in voluntary hospitals other than church controlled, 11.2 days. The proportion of TDOC was slightly below that of discharges in both government hospitals and proprietary hospitals. Both these types of hospitals had the shortest ALOS, 9.8 days.

[8] See footnote 7.

TABLE 4
Percent Distribution of Aged Medicare Enrollment, Short-Stay Hospital Discharges, and Total Days of Care, by Region, 1978

Enrollment Discharges, and Days of Care	All Areas	North-east	North Central	South	West
HI Enrollment	100.0	23.9	26.5	31.4	16.2
Discharges	100.0	21.3	28.5	34.4	15.1
Days of Care	100.0	26.3	29.0	31.7	12.4

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

TABLE 5
Number and Percent Distribution of Discharges of Aged Enrollees from Short-Stay Hospitals, Days of Care, and Average Length of Stay, by Type of Hospital Control, 1978 (Discharges and Days of Care in Thousands)

Hospital Control	Discharges		Total Days of Care		Average Length of Stay
	Number	Percent	Number	Percent	
All Short-Stay Hospitals	8,147	100.0	87,535	100.0	10.7
Voluntary	5,779	70.9	64,327	73.5	11.1
Church	1,788	21.9	19,714	22.5	11.0
Other	3,991	49.0	44,613	51.0	11.2
Proprietary	764	9.4	7,458	8.5	9.8
Government	1,603	19.7	15,751	18.0	9.8

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

Bed Size of Hospital: Short-stay hospitals with less than 200 beds (representing an estimated 72 percent of all short-stay beds) accounted for 39.1 percent of the aged persons discharged, but accounted for only 34.4 percent of TDOC (Table 6). Hospitals with 200 to 499 beds (an estimated 23 percent of beds) accounted for 42.9 percent of the discharges and accounted for 45.0 percent of TDOC. Hospitals with 500 or more beds (5 percent of beds) accounted for 18.0 percent of the discharges and for 20.6 percent of TDOC. The disproportionate TDOC with increasing hospital size was the result of a steadily increasing ALOS as bed size of hospitals increased. ALOS increased from 8.4 days for hospitals with less than 50 beds to 12.8 days in hospitals with 750 or more beds.

The proportion of discharges with surgery varied by type of hospital control and generally increased by bed size (Table 7). Nearly one-third of all discharges were with surgery. In hospitals with less than 100 beds, the proportion was 18 percent and increased to 41 percent in hospitals with 500 or more beds. Of the discharges from voluntary hospitals, 25 percent were with surgery while in proprietary hospitals discharges with surgery accounted for only 3 percent of all discharges.

TABLE 6
Number and Percent Distribution of Discharges of Aged Enrollees from Short-Stay Hospitals, Days of Care, and by Bed Size, 1978
(Discharges and Days of Care in Thousands)

Bed Size	Discharges		Total Days of Care		Average Length of Stay
	Number	Percent	Number	Percent	
All Short-Stay Hospitals	8,147	100.0	87,535	100.0	10.7
Less than 50 Beds	540	6.6	4,541	5.2	8.4
50-99	1,034	12.7	9,454	10.8	9.1
100-149	834	10.2	8,142	9.3	9.8
150-199	783	9.6	8,001	9.1	10.2
200-249	776	9.5	8,459	9.7	10.9
250-299	697	8.6	7,716	8.8	11.1
300-399	1,147	14.1	13,104	15.0	11.4
400-499	870	10.7	10,106	11.5	11.6
500-749	1,033	12.7	12,476	14.3	12.1
750 or More	432	5.3	5,536	6.3	12.8

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

TABLE 7
Number and Percent Distribution of Discharges, of Aged Enrollees from Short-Stay Hospitals with Surgery, by Bed Size and Control, 1978
(in Thousands)

Bed Size	Discharges						
	Total	With Surgery				Proprietary	Government
		Total	Voluntary				
			Total	Church	Other		
All Discharges	8,147	2,690	2,052	677	1,375	243	395
Less than 100 Beds	1,574	284	152	27	125	45	87
100-199	1,617	504	335	81	255	81	88
200-299	1,473	537	402	119	283	76	59
300-499	2,017	766	647	257	390	36	83
500 or More	1,465	599	516	193	323	5	79
	Percent Distribution						
All Discharges	100.0	33.0	25.2	8.3	16.9	3.0	4.8
Less than 100 Beds	100.0	18.0	9.7	1.7	7.9	2.9	5.5
100-199	100.0	31.2	20.7	5.0	15.8	5.0	5.4
200-299	100.0	36.5	27.3	8.1	19.2	5.2	4.0
300-499	100.0	38.0	32.1	12.7	19.3	1.8	4.1
500 or More	100.0	40.9	35.2	13.2	22.0	.3	5.4

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

Hospital Use by Aged Surgical Patients

In 1978, 2.7 million hospital discharges of aged persons involved surgery, 33.0 of all discharges (Table 8). The rate of discharges with surgery was 112 per 1,000 enrollees.

The proportion of discharges with surgery decreased with advancing age, from 38.6 percent for those aged 65-66 to 24.2 percent for those 85 years of age and over. However, the surgery rate per 1,000 enrolled increased from 102 per 1,000 at ages 65 and 66 to 122 per 1,000 at 80-84 years of age and then decreased to 113 per 1,000 for those 85 years of age and over.

Thirty-six percent of the discharges of men involved surgery or 18 percent more than the percentage for women, 31 percent. The surgery rate for men was 133 per 1,000 enrolled or 36 percent higher than women, 98 per 1,000.

Whites had an 11 percent higher proportion of discharges with surgery, 33.3 percent, than other races, 30.0 percent. Whites also had a 31 percent higher surgery rate, 115 per 1,000 enrolled than others, 88 per 1,000.

The percent of discharges with surgery ranged from a low of 30.8 percent in the South to a high of 36.0 percent in the Northeast, a 17 percent difference. The difference in the rate of discharges with surgery by region was smaller, 9 percent, between the Northeast (109 per 1,000) and the North Central States (119 per 1,000).

The proportion of discharges with surgery increased sharply with the size of the hospital, increasing from 18 percent in hospitals with less than 100 beds to 41 percent among hospitals with 500 or more beds. This is expected since larger hospitals provide more varied and specialized facilities and can perform more types of operations.

The ALOS of discharges with surgery were longer, 12.5 days, than those without surgery, 9.6 days. ALOS for discharges with surgery increased steadily with age, 11.1 days at ages 65 and 66 to 15.5 days at 85 years of age and over. Women had slightly higher ALOS, 12.9 days, than men, 12.2 days, races other than white had a 22 percent longer ALOS, 15.0 days, than whites, 12.3 days.

For discharges involving surgery, the Northeast had the longest ALOS, 14.7 days; the West had the shortest, 10.3 days. ALOS increased with the increase in the bed size of the hospital from 11.0 days in hospitals with less than 100 beds to 13.8 days in hospitals with 500 or more beds.

TABLE 8
Number of Discharges of Aged Enrollees from Short-Stay Hospitals, Number with Surgery and Average Length of Stay with Surgery, by Demographic Characteristics, and Bed Size, 1978
(Discharges in Thousands)

Characteristics	Discharges				
	Total	With Surgery			Average Length of Stay
		Number	Percentage of Total	Per 1,000 Enrolled	
Total (All Areas)	8,147	2,690	33.0	112	12.5
Age					
65 and 66	887	342	38.6	102	11.1
67 and 68	840	319	38.0	102	11.3
69 and 70	840	309	36.8	106	11.5
71 and 72	806	288	35.7	112	11.9
73 and 74	769	268	34.9	117	12.3
75-79	1,707	551	32.3	121	12.9
80-84	1,279	366	28.6	122	14.0
85 and over	1,019	247	24.2	113	15.5
Sex					
Men	3,595	1,296	36.1	133	12.2
Women	4,552	1,394	30.6	98	12.9
Race					
White	7,347	2,444	33.3	115	12.3
All Other Races	596	179	30.0	88	15.1
Region					
Northeast	1,739	626	36.0	109	14.7
NorthCentral	2,318	756	32.6	119	13.0
South	2,804	864	30.8	115	11.7
West	1,228	428	34.9	110	10.3
Bed Size					
Less than 100 Beds	1,574	284	18.0	NA	11.0
100-199	1,617	504	31.2	NA	11.5
200-299	1,473	537	36.5	NA	12.3
300-499	2,017	766	38.0	NA	13.0
500 or More	1,465	599	40.9	NA	13.8

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

NA — Not applicable.

Discharges by Death From Short-Stay Hospitals

In 1978, 534,000 discharges or 6.6 percent of all discharges of aged persons from short-stay hospitals are represented by persons who died in the hospital (Table 9). The proportion of deaths increased sharply with age. At ages 65 and 66 deaths per 100 discharges was 4.2 and increased to 11.0 at ages 85 and over. Deaths per 100 discharges was one-third higher for men, 7.6, than for women 5.7. Deaths per 100 discharges was 14 percent higher for other races, 7.4, than whites, 6.5. There has been a steady decrease in discharges by death among aged beneficiaries between 1967 and 1977. Deaths per 100 discharges decreased from 9.8 in 1967 to 6.6 in 1977 where it stayed in 1978. This decrease resulted from both a decline in deaths in hospitals per 1,000 enrolled and an increase in discharges per 1,000 enrolled.

The ALOS of persons discharged dead was higher, 12.6 days, than those discharged alive, 10.6 days.[9] This difference held for age, race, and sex. The ALOS of persons discharged dead who underwent surgery was 22.7 days or 12.3 days longer than deaths without surgery. Of the discharges ending in death, in the absence of surgery, 23.7 percent occurred in the first 24 hours.[10]

[9] See footnote 7.

[10] See footnote 7.

Charges and Reimbursements in Short-Stay Hospitals, 1978

All Discharges

Total charges of aged enrollees discharged from short-stay hospitals were $19.5 billion in 1978 (Table 10). Of this amount, discharged patients were responsible for $1.3 billion (7 percent) in nonreimburseable charges.[11] Nonreimburseable charges consist of inpatient hospital deductibles, coinsurance payments, blood deductibles, and other noncovered charges, such as days of care after benefits are exhausted and private duty nurses. Medicare reimbursed hospitals $14 billion or 71.5 percent of charges on an interim basis. Interim payments are based on a *per diem* amount or a percent of total charges. A final (retroactive) reimbursement of approximately $0.7 billion was determined after the end of the fiscal year based on the hospital's audited reasonable costs of operation (Barrett). The remaining nonrecoverable charges, $3.5 billion, represent primarily the difference between hospital charges to Medicare patients and reasonable hospital costs (i.e. the "mark-up"). Total charges per discharge were $2,397 and reimbursements per discharge were $1,714.

[11] See footnote 7.

TABLE 9
Discharges by Death of Aged Enrollees from Short-Stay Hospitals by Age, Sex, and Race, 1978

Age, Sex, and Race	Deaths			
	Number (in Thousands)	Per 100 Medicare Discharges	Average Length of Stay	
			Total	With Surgery
All Persons	534	6.6	12.6	22.7
Age				
65 and 66	38	4.2	13.6	24.1
67 and 68	38	4.6	13.1	23.1
69 and 70	42	5.0	12.9	22.5
71 and 72	43	5.4	13.1	23.3
73 and 74	45	5.8	12.9	23.8
75-79	112	6.6	12.9	23.0
80-84	104	8.1	12.4	22.3
85 and Over	112	11.0	11.5	20.8
Sex				
Men	272	7.6	12.2	22.2
Women	261	5.7	13.0	23.2
Race				
White	475	6.5	12.4	22.3
All Other Races	44	7.4	14.2	26.6

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

TABLE 10
Aged Enrollment, Discharges from Short-Stay Hospitals, Days of Care, Charges, and Reimbursements, by Demographic Characteristics, 1978
(Discharges and Days in Thousands; Charges and Reimbursements in Millions)

Demographic Characteristics	HI Enrollment[1]	Discharges		Total Days of Care		Charges				Reimbursements			
		Number	Per 1,000 Enrolled	Number	Per 1,000 Enrolled	Per Discharge	Amount	Per Discharge	Per Day	Amount	Per Discharge	Per Covered Day	Per Enrollee
Total	23,984	8,147	340	87,535	3,650	10.7	$19,524	$2,397	$223	$13,967	$1,714	$162	$582
Age													
65 and 66	3,366	887	263	8,686	2,581	9.8	2,082	2,348	240	1,439	1,622	169	428
67 and 68	3,124	840	269	8,333	2,667	9.9	1,996	2,377	240	1,382	1,645	168	442
69 and 70	2,902	840	290	8,459	2,915	10.1	1,988	2,367	235	1,388	1,652	166	478
71 and 72	2,576	806	313	8,339	3,237	10.3	1,939	2,405	233	1,364	1,692	166	530
73 and 74	2,291	769	336	8,129	3,549	10.6	1,851	2,406	228	1,312	1,706	164	573
75-79	4,537	1,707	376	18,786	4,141	11.0	4,151	2,432	221	2,992	1,753	162	659
80-84	2,997	1,279	427	14,704	4,906	11.5	3,094	2,419	210	2,271	1,776	158	758
85 and Over	2,191	1,019	465	12,099	5,522	11.9	2,423	2,379	200	1,818	1,784	155	830
Sex													
Men	9,728	3,595	370	37,446	3,849	10.4	8,949	2,490	239	6,162	1,714	167	633
Women	14,256	4,552	319	50,090	3,514	11.0	10,575	2,323	211	7,805	1,715	159	547
Race													
White	21,289	7,347	345	78,071	3,667	10.6	17,381	2,366	223	12,423	1,691	162	584
All Other Races	2,036	596	293	7,250	3,562	12.2	1,655	2,776	228	1,196	2,007	169	587
Region													
Northeast	5,730	1,739	304	22,998	4,013	13.2	5,460	3,140	237	3,676	2,114	166	642
North Central	6,361	2,318	364	25,346	3,985	10.9	5,317	2,294	210	4,012	1,731	161	631
South	7,530	2,804	372	27,761	3,687	9.8	5,533	1,974	199	3,886	1,386	141	516
West	3,882	1,228	316	10,817	2,786	8.8	3,137	2,554	290	2,348	1,912	220	605

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

[1] As of July 1, 1978.

Charges and Reimbursements by Demographic Characteristics

Age: Charges per day decreased with age from $240 a day for those 65-68 years of age to $200 a day for those 85 years of age and over (Table 10). The decrease in the mean charge per day with age reflected longer stays with increasing age. This results in lower charges per day because charges for ancillary services, which are usually furnished at the start of a hospital stay, are spread over more hospital days. Hospital charges generally comprise fixed charges for room and board and variable charges for ancillary services, such as the use of the operating room and radiology services. Despite an increase in ALOS with age, there was little variation in charges per discharge by age, ranging from $2,348 for ages 65-66 to $2,432 for ages 75-79. This may reflect the offsetting effect of the decrease in the proportion of discharges with surgery as age increases.

Reimbursements per aged enrollee increased with advancing age from $428 at ages 65 and 66 to $830 at ages 85 and over. This was the result of the increase with age in ccvered days of care per 1,000 enrolled. Covered days of care per 1,000 enrolled increased from 2,537 for ages 65 and 66 to 5,367 for ages 85 and over. The rise more than offset a small decrease in reimbursements per covered day, from $169 to $155 for the comparable age groups.

Sex: Charges per day were 13 percent higher for men ($239) than women ($211). The higher proportion of surgery among men, 36 percent, than for women, 31 percent (Table 8), accounts in part, for the higher daily charge of men. Charges per discharge were 7 percent higher for men ($2,490) than women ($2,323) though ALOS was slightly higher for women, 11.0 days, than men, 10.4 days.

Since reimbursements per discharge were identical by sex ($1,714 for men and $1,715 for women) and the discharge rate of men (370 per 1,000 enrolled) exceeded that of women (319 per 1,000), reimbursements per enrollee for men, $633, exceeded that for women, $547.

Race: Charges per day for aged nonwhites was slightly higher, $228, than for whites, $223. However, charges per discharge of nonwhites was $2,776 or 17 percent more than whites, $2,366, since the ALOS of nonwhites, 12.2 days, exceeded that of whites, 10.6 days.

Reimbursements per nonwhite enrollee ($587) was about the same as whites ($584). This was the result of a higher discharge rate among whites, 345 per 1,000 enrolled than nonwhites, 293 per 1,000 which was offset by a higher reimbursement per discharge, for nonwhites ($2,007) than whites, ($1,691). The higher reimbursement for nonwhites largely reflected the higher ALOS.

Residence: Despite differences in ALOS and other patterns of care between regions, differences in price levels between regions prevent interpretation of charge variation as representing relative differences in the resources use to furnish care as can be done for age, sex, and race. For this reason, reimbursements are used here only to indicate regional differences in Medicare's costs for hospital care. Both reimbursement per day and per discharge have shown persistent differences by region. Reimbursements per discharge in both 1967 and 1978 have been highest in the Northeast followed by the West, North Central, and Southern States. In 1978, reimbursements per discharge in the Northeast were $2,114 or 53 percent greater than the South, $1,386. Reimbursements per day in 1967 and 1978 were highest in the West followed by the Northeast, North Central, and Southern States.

Reimbursements per day in 1978 were $220 in the West, or 56 percent more than the South, $141. ALOS has consistently ranged from high to low in the following order by region: Northeast, North Central, South, and West.

Reimbursements per discharge were highest in the Northeast because ALOS was highest, 13.2 days, and reimbursements per day were second highest, $166. Reimbursements per discharge were lowest in the South because of the combination of the lowest reimbursements per day, $141, and the second lowest ALOS, 9.8 days.

The Northeast was the region with the highest reimbursement per aged enrollee, $642. This resulted from the highest reimbursements per discharge, $2,114, and despite the lowest number of discharges per 1,000 enrolled, 304. The South had the lowest reimbursement per enrollee, $516. This was the result of the lowest reimbursement per discharge, $1,386 and despite the highest discharge rate, 372 per 1,000 enrolled.

As shown in the following table, the South was the only region that received a lower share, in 1978, of reimbursements for short-stay hospital services than its proportion of HI enrollment of the aged. However, the proportion of the days of care used by aged enrollees in the South were equal to the proportion of HI enrollees living there. Conversely, the West was the only region which used a lower proportion of the days of care than its proportion of the aged HI enrollment. But the West received a proportion of Medicare reimbursements for short-stay hospital services equal to its proportion of HI enrollees.

Percent Distribution: Aged Enrollment, Discharges, Covered Days of Care, and Reimbursement by Region, 1978

Region	Percent Distribution			
	HI Enrollment	Discharges	Covered Days	Reimbursement
U. S.	100.0	100.0	100.0	100.0
Northeast	24.4	21.5	26.0	26.4
North Central	27.0	28.7	29.3	28.8
South	32.0	34.7	32.2	27.9
West	16.5	15.2	12.5	16.9

Charges and Reimbursements By Length of Stay

As one would expect, average charges per discharge increased markedly with length of stay among the aged (Table 11). Stays of less than 7 days averaged $970 in charges while stays of 22 days or more averaged $7,885. Nearly half of all discharges were 7 days or less but they accounted for only one-fifth of total charges and about 17 percent of the reimbursements. In contrast, discharges of 22 days or more represented only one-tenth of discharges but slightly more than one-third of total charges and reimbursements.

Reimbursements By Discharge Status

Surgery: Discharges of aged patients with surgery accounted for disproportionately higher days of care, total charges, and reimbursements (Table 12). One-third of discharges involved surgery but accounted for nearly 39 percent of days of care, 46 percent of total charges and 43 percent of reimbursements.[12] Charges per day for discharges with surgery were $267 and for stays without surgery were $195. Charges per discharge with surgery were $3,354, 74 percent more than stays without surgery, $1,925.

Table 13 shows, in part the sources of the higher charges for discharges with surgery. Over 15 percent of the discharges involving surgery required some intensive care (including coronary care) compared to 12 percent for discharges without surgery.

The proportion of the hospital days spent in intensive care during stays involving surgery was almost double (26.6 percent) the proportion for stays without surgery (13.8 percent). Despite the obviously higher costs of intensive care, accommodation charges for stays involving surgery were only 44 percent of total charges compared to almost 57 percent for stays without surgery. The difference was due to the greater intensity of ancillary services required by persons undergoing surgery. Charges for services other than accommodations accounted for 56 percent of the charges incurred by persons discharged with surgery. Overall, ancillary services accounted for 49 percent of the charges for services furnished by hospitals to aged persons in 1978.

[12] The proportion of reimbursements is lower than the proportion of charges because per diem reimbursement rates based on total covered costs are apportioned among total covered days. Discharges without surgery, which are less costly than discharges with surgery account for two-thirds of all discharges and 61 percent of the TDOC, and thus, have a greater effect on the overall average reimbursements per day. The same considerations apply to discharges with death compared to live discharges. Charges are used for basic comparisons to indicate differences in the relative market value of the services furnished.

TABLE 11
Number of Discharges of Aged Enrollees, Charges, and Reimbursements From Short-Stay Hospitals, by Length of Stay, 1978
(Discharges in Thousands; Charges and Reimbursements in Millions)

Length of Stay	Discharges		Total Charges			Reimbursements		
	Number	Percent of Total	Amount	Per Discharge	Percent of Total	Amount	Per Discharge	Percent of Total
All Discharges	8,147	100.0	$19,524	$2,397	100.0	$13,967	$1,714	100.0
7 Days or Less	3,983	48.9	3,864	970	19.8	2,428	610	17.4
8-14	2,357	28.9	5,251	2,228	26.9	3,910	1,659	28.0
15-21	958	11.8	3,715	3,878	19.0	2,780	2,902	19.9
22 or More	849	10.4	6,694	7,885	34.3	4,849	5,711	34.7

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

TABLE 12
Number of Discharges of Aged Enrollees, Days of Care, Charges, and Reimbursements from Short-Stay Hospitals, by Discharge Status, 1978
(Discharges and Days of Care in Thousands; Charges and Reimbursements in Millions)

Discharge Status	Discharges		Total Days of Care		Total Charges				Reimbursements		
	Number	Percent of Total	Number	Percent of Total	Amount	Per Day	Per Discharge	Percent of Total	Amount	Per Discharge	Percent of Total
Total	8,147	100.0	87,535	100.0	$19,524	$223	$2,397	100.0	$13,967	$1,714	100.0
Discharged With Surgery	2,690	33.0	33,728	38.5	9,022	267	3,354	46.2	6,020	2,238	43.1
Discharged Without Surgery	5,456	67.0	53,807	61.5	10,502	195	1,925	53.8	7,947	1,457	56.9
Discharged Alive	7,613	93.4	80,821	92.3	17,411	215	2,287	89.2	12,751	1,675	91.3
Discharged Dead	534	6.6	6,714	7.7	2,112	315	3,955	10.8	1,215	2,275	8.7

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

TABLE 13
Number and Percent Distribution of Discharges of Aged Enrollees from Short-Stay Hospitals, Days of Care, Charges, and Reimbursements, by Bed Size and Control, 1978
(Discharges and Days of Care in Thousands; Charges and Reimbursements in Millions)

Size and Type of Hospital Control	Discharges		Total Days of Care		Charges				Reimbursement			
	Number	Percent	Number	Percent	Amount	Per Discharge	Per Day	Percent of Total	Amount	Per Discharge	Per Covered Day	Percent of Total
Total	8,147	100.0	87,535	100.0	$19,524	$2,397	$223	100.0	$13,967	$1,714	$160	100.0
Bed Size												
Less than 50	540	6.6	4,541	5.2	676	1,252	149	3.5	498	922	110	3.6
50-99	1,034	12.7	9,454	10.8	1,645	1,591	174	8.4	1,183	1,144	125	3.6
100-149	834	10.2	8,142	9.3	1,592	1,909	196	8.2	1,132	1,357	139	8.1
150-199	783	9.6	8,001	9.1	1,696	2,166	212	8.7	1,204	1,538	150	8.6
200-249	776	9.5	8,459	9.7	1,939	2,499	229	9.9	1,351	1,741	160	9.7
250-299	697	8.6	7,716	8.8	1,742	2,499	226	8.9	1,208	1,733	157	8.6
300-399	1,147	14.1	13,104	15.0	3,056	2,664	233	15.7	2,170	1,892	166	15.5
400-499	870	10.7	10,106	11.5	2,435	2,799	241	12.5	1,751	2,013	173	12.5
500-749	1,033	12.7	12,476	14.3	3,194	3,092	256	16.4	2,298	2,225	184	16.5
750 or more	432	5.3	5,536	6.3	1,551	3,590	280	7.9	1,172	2,711	212	8.4
Type of Control												
Voluntary	5,779	70.9	64,327	73.5	14,678	2,540	228	75.2	10,556	1,827	164	75.6
Church	1,788	21.9	19,714	22.5	4,444	2,486	225	22.8	3,211	1,796	163	23.0
Other	3,991	49.0	44,613	51.0	10,234	2,564	229	52.4	7,345	1,840	165	52.6
Proprietary	764	9.4	7,458	8.5	1,921	2,513	258	9.8	1,242	1,626	167	8.9
Government	1,603	19.7	15,751	18.0	2,925	1,825	186	15.0	2,168	1,352	138	15.5

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

Life Status: Patients discharged dead also incurred disproportionately more days of care, charges, and reimbursements. Those who died accounted for 6.6 percent of discharges, 7.7 percent of days of care, 10.8 percent of charges, and 8.7 percent of reimbursements (Table 12). Charges per day for those who died were $315 or nearly 50 percent more than those discharged alive, $215. Charges per discharge were $3,955 for those who died, 73 percent more than the average of $2,287 for those discharged alive. As previously noted, the ALOS per discharges ending in death (12.6 days) was longer than for live discharges (10.6 days). Reimbursements per discharge were $2,275 for those who died and $1,675 for those discharged alive.

Table 13 shows, in part, why charges for persons who died in the hospital were so much higher than for persons discharged alive. Almost one-third of the discharges ending in death involved intensive care which accounted for almost one-third of the days of care in these cases. The comparable proportions for persons discharged alive were, 12 and 18 percent, respectively. Despite the greater use of costly intensive care accommodations, accommodation charges accounted for only 41 percent of the total charges incurred by persons who died during hospitalization. Ancillary services accounted for almost 59 percent of the charges incurred by persons who died.

Aged enrollees with surgical stays who were discharged dead had much longer stays than those with surgical stays discharged alive during 1978, as shown in the following table.

Length of Stay and Charges	With Surgery		Without Surgery	
	Discharged		Discharged	
	Alive	Dead	Alive	Dead
Avg. Length of Stay	12.2	22.7	9.8	10.4
Avg. Charge Per Discharge	$3,127	$9,420	$1,853	$2,750
Avg. Charge Per Day	$ 257	$ 416	$ 189	$ 266

Among those with surgery, charges per discharge were higher for those who died, $9,420, than those discharged alive, $3,127. The comparable figures of average charge per day for those who died were $416, and those who lived, $257. Differences for those not undergoing surgery were not as great. Length of stay was only slightly longer for those who died, 10.4 days per discharge, compared to 9.8 days for those discharged alive. Charges per discharge for those who died were considerably higher, $2,750, compared to $1,853 for those discharged alive. Simiarly, charges per day for those who died was $266 and for those discharged alive, $189. Use of intensive care accommodations and ancillary services account for these large differences.[13]

[13] See footnote 7.

Charges and Reimbursements by Hospital Size and Type of Control

As previously noted in Table 6, ALOS increases with hospital bed size, as do reimbursements per day (Table 14). As a result, smaller hospitals, those under 200 beds, had a smaller proportion of reimbursements than their proportions of both discharges and days of care. The proportions were: reimbursements, 29 percent, discharges, 39 percent, and days of care, 34 percent. Hospitals with 200 to 300 beds had similar proportions for reimbursements (18 percent), discharges (18 percent), and days of care (19 percent). Hospitals with 300 or more beds had a higher proportion of reimbursements, 53 percent, than discharges, 43 percent, and days of care, 47 percent. The higher reimbursements, both per discharge and per day, with increasing hospital size, were partially due to the greater number of facilities and services they provided (Ruther). These facilities and services permit treatment of complex illnesses and raise the length of stay and cost of hospital services.

Charges were roughly proportional to discharges and days of care for both voluntary and proprietary hospitals. Government hospitals accounted for only 15 percent of charges but 20 percent of discharges and 18 percent of days of care. They also had the lowest charge per day.

Discharges of Aged Persons: Multiple Stays

In 1978, the number of aged persons discharged was 5.5 million of which 1.7 million persons had more than one hospital stay (Table 15). The probability of an aged enrollee being hospitalized during the year was 23 percent. After the initial hospital stay, the probability of another hospital stay during the year increased to 31 percent.

The relationship of multiple hospital stays to demographic characteristics was similar to those for one stay. Thus, the number of persons with multiple stays per 1,000 enrolled more than doubled with age, from 47 for ages 65 and 66 to 102 for those 85 years of age and over; was greater for men, 79, than for women, 65; and greater for whites, 72, than for other races, 60.

The 5.5 million aged enrollees discharged from short-stay hospitals accounted for 8.1 million discharges of 1.5 discharges per person (Table 16). Nearly 3.8 million persons or 69 percent of all discharged persons had one hospital stay, 20 percent had two stays, and 11 percent had three or more stays. The proportion of aged persons with multiple stays increased from 25.4 percent of those hospitalized in 1967 (Helbing) to 31.0 percent in 1978. ALOS per aged person with one or more stays fell from 19.1 days in 1967 to 16.0 days in 1977 and was unchanged in 1978. Persons with one stay averaged 10.6 days of care in 1978; those with two stays, 22.2 days; and with three or more stays, 39.4 days.

TABLE 14
Number of Discharged Aged Enrollees by Number of Stays and Age, Sex and Race, 1978

Age, Sex, and Race	All Stays		Multiple Stays		
	Number of Persons (in Thousands)	Per Per 1,000 Enrolled	Number of Persons (in Thousands)	Per 1,000 Enrolled	Percent of All Stays
All Persons	5,463	228	1,694	71	31.0
Age					
65 and 66	597	177	158	47	26.5
67 and 68	564	181	170	54	30.1
69 and 70	562	194	172	59	30.6
71 and 72	537	208	167	65	31.1
73 and 74	512	224	162	71	31.6
75-79	1,133	250	365	80	32.2
80-84	857	286	278	93	32.4
85 and Over	702	320	223	102	31.8
Sex					
Men	2,356	242	768	79	32.6
Women	3,107	218	927	65	29.8
Race					
White	4,918	231	1,531	72	31.1
All Other	405	199	123	60	30.4

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

TABLE 15
Number and Percent Distribution of Aged Persons Discharged from Short-Stay Hospitals, Number of Discharges, Days of Care, Charges and Reimbursements by Number of Stays, 1978
(Persons and Days in Thousands; Charges and Reimbursements in Millions)

Number of Stays	Persons Discharged		Total Days of Care			Charges			Reimbursements		
	Number	Percent	Number	Per Person	Percent	Amount	Per Person	Percent	Amount	Per Person	Percent
All Stays	5,463	100.0	87,535	16.0	100.0	$19,524	$3,573	100.0	$13,967	$2,556	100.0
1 Stay Only	3,768	69.0	39,944	10.6	45.6	8,983	2,384	46.0	6,285	1,668	45.0
2 Stays Only	1,106	20.2	24,562	22.2	28.1	5,485	4,959	28.1	3,972	3,591	28.4
3 Stays or More	588	10.8	23,167	39.4	26.5	5,049	8,586	25.9	3,709	6,307	26.6

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

TABLE 16
Enrollment of Disabled, Short-Stay Hospital Discharges, Days of Care, and Average Length of Stay, by Demographic Characteristics, 1978
(Enrollment, Discharges, and Days in Thousands)

Demographic Characteristics	HI Enrollment[1]	Discharges		Total Days of Care		Average Length of Stay
		Number	Per 1,000 Enrolled	Number	Per 1,000 Enrolled	
All Areas[2]	2,793	1,061	380	10,638	3,809	10.0
United States	2,706	1,054	390	10,569	3,906	10.0
Age						
Under 35	345	101	294	1,032	2,993	10.2
35-44	335	114	341	1,100	3,280	9.6
45-54	647	249	385	2,384	3,687	9.6
55-59	609	243	398	2,459	4,038	10.1
60-64	857	354	413	3,664	4,273	10.4
Sex						
Men	1,763	621	352	6,034	3,423	9.7
Women	1,030	440	427	4,604	4,470	10.5
Race						
White	2,299	895	389	8,809	3,832	9.8
All Other Races	448	146	326	1,610	3,596	11.0
Region						
Northeast	597	208	348	2,503	4,194	12.0
North Central	642	264	412	2,813	4,381	10.7
South	1,006	411	409	3,799	3,778	9.2
West	457	170	372	1,444	3,158	8.5

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

[1] As of July 1978.

[2] Includes unknown race and unknown residence.

Though persons with one stay represented 69 percent of all persons discharged, they accounted for only 46 percent of charges and 45 percent of Medicare reimbursements. In contrast, the 11 percent of persons with three or more stays accounted for 26 percent of charges and almost 27 percent of the reimbursements.

Table 17 shows that though Medicare reimbursed a higher proportion of the patients' total incurred charges as their number of stays increased, from 69 percent for one stay to 73 percent for 3 or more stays, the out-of-pocket expenses for deductibles, coinsurance and noncovered services (e.g. private duty nurses) increased significantly from $186 for persons with one stay to $498 for three or more stays. Private complementary insurance coverage may have paid for some of these expenses. The rapid increase in the average coinsurance amounts with increasing number of stays reflect persons exceeding the 60 days covered entirely by Medicare during a benefit period and the need to use coinsurance and lifetime reserve days.

After the 60th day of care in a hospital during the benefit period, the patient is responsible for a coinsurance payment equal to 25 percent of the HI deductible for the 61st through 90th day of care. From the 91st day on, the patient may assume responsibility for all further charges or he may draw on a lifetime reserve of 60 days provided by the Medicare program. If the patient uses lifetime reserve days, he is responsible for a coinsurance payment equal to 50 percent of the HI deductible. Any lifetime reserve days used are counted against the limit of 60 — they are not renewable.

As shown in Table 18, the proportion of persons using coinsurance and lifetime reserve days in 1978 increased as the number of stays increased. Of the persons with only one stay, 1.1 percent used coinsurance days and 0.4 percent used lifetime reserve days. For persons with 3 or more stays, the respective percentages increased to 11.4 and 3.2 percent. The number of each type of day used also increased with the number of stays. Persons with one stay who used coinsurance days used an average of 14.6 days. Persons with 3 stays or more used an average of 16.8 days. For lifetime reserve days, the comparable averages were 19.9 and 22.2 days, respectively.

TABLE 17
Percent Distribution of Disabled Medicare Enrollment, Short-Stay Hospital Discharges, and Total Days of Care, by Region, 1978

Enrollment, Discharges, and Days of Care	All Areas	North-east	North Central	South	West
HI Enrollment	100.0	21.4	23.0	36.0	16.4
Discharges	100.0	19.6	24.9	38.7	16.0
Days of Care	100.0	23.5	26.4	35.7	13.6

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

TABLE 18
Number and Percent Distribution of Disabled Enrollees Discharged from Short-Stay Hospitals, Days of Care, and Average Length of Stay, by Control, 1978
(Discharges and Days of Care in Thousands)

Hospital Control	Discharges		Total Days of Care		Average Length of Stay
	Number	Percent	Number	Percent	
All Short-Stay Hospitals	1,061	100.0	10,638	100.0	10.0
Voluntary	699	65.9	7,307	68.7	10.5
Church	212	20.0	2,231	21.0	10.5
Other	487	45.9	5,076	47.7	10.4
Proprietary	104	9.8	924	8.7	8.9
Government	259	24.4	2,408	22.6	9.3

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

Section 4. Use Of Short-Stay Hospital Services by the Disabled, 1978

This section presents data on the use of short-stay hospital services by the disabled in 1978 and the charges incurred and the amounts reimbursed by Medicare. Data first contrasts the aged and disabled in the overall use of short-stay hospital services. Then, data are presented to show use by the demographic characteristics of the disabled and by type of control and bed size of the hospital.

The Disabled Compared to the Aged

In 1978, the TDOC rate for short-stay hospital services among the disabled was 3,809 per 1,000 enrollees (Table 1). This was about 4 percent above the rate for the aged (3,650 per 1,000). Although the ALOS among the aged (10.7 days) was about 7 percent higher than for the disabled (10.0 days), the discharge rate among the disabled (380 per 1,000 enrollees) was almost 12 percent higher than the rate for the aged (340 per 1,000). Overall, the disabled make greater use of hospital services than the aged.

Use by Demographic Characteristics of the Disabled, 1978

Age: TDOC per 1,000 disabled enrollees increased with each successive age group from 2,993 for those under 35 years of age to 4,273 per 1,000 for those 60-64 years of age (Table 19). The rising TDOC rate predominantly reflected an increasing discharge rate, rising from 294 per 1,000 enrolled for those under 35 to 413 per 1,000 for those 60-64 years of age. The ALOS was 10.2 days for persons under 35 and ranged from 9.6 days for persons 35 to 44 years of age to 10.4 days for persons 60-64 years of age.

Sex: The TDOC rate of women, 4,470 per 1,000 enrolled, was 31 percent higher than for men. This was the result of a 21 percent higher discharge rate of women, 427 per 1,000, than men, 352 per 1,000, and a higher ALOS, 10.5 days, compared to 9.7 days.

Race: TDOC per 1,000 enrolled of whites, 3,832, was 7 percent more than that of all other races, 3,596. This resulted from a 19 percent higher discharge rate of whites (389 per 1,000 to 326 per 1,000 for nonwhites) which was only partly offset by an 11 percent higher ALOS of nonwhites (11.0 days to 9.8 days for whites). The 7 percent difference in the TDOC rate in 1978 is a decrease from 20 percent in 1974 and 9 percent in 1977 (Silverman and Smith). The decrease reflected mainly the decline in the difference in discharge rates, the white rate in 1974 (327 per 1,000) was 37 percent higher than for nonwhites (239 per 1,000).

Region: The North Central States had the highest TDOC rate, 4,381 per 1,000 disabled enrollees, because it had the highest discharge rate (412 per 1,000) and an above average ALOS (10.7 days). Among the aged, the Northeast had the highest TDOC rate. The West had the lowest TDOC rate because it had the lowest ALOS (8.5 days) and a below average discharge rate (372 per 1,000). The West had the lowest rate for the aged, also. The ALOS fell from 1974 to 1978 in all four regions.

The distribution of hospital use, discharges and days of care differed somewhat from the distribution of HI enrollment among the disabled (Table 20). For example, the North Central States had both higher proportions of discharges, 24.9 percent, and days of care, 26.4 percent than of enrollment, 23.0 percent. The West had a lower share of discharges and days of care than enrollment.

TABLE 19
Number and Percent Distribution of Discharges of Disabled Enrollees from Short-Stay Hospitals, Days of Care, by Bed Size, 1978
(Discharges and Days of Care in Thousands)

Bed Size	Discharges		Total Days of Care		Average Length of Stay
	Number	Percent	Number	Percent	
All Short-Stay Hospitals	1,061	100.0	10,638	100.0	10.0
Less Than 50 Beds	56	5.3	407	3.8	7.3
50-99	127	12.0	989	9.3	7.8
100-149	102	9.6	884	8.3	8.7
150-199	96	9.0	879	8.3	9.2
200-249	95	9.0	940	8.8	9.9
250-299	86	8.1	887	8.3	10.3
300-399	143	13.5	1,500	14.1	10.5
400-499	124	11.7	1,371	12.9	11.1
500-749	156	14.7	1,814	17.1	11.6
750 or More	76	7.2	969	9.1	12.8

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

TABLE 20
Number and Percent Distribution of Discharges of Disabled Enrollees from Short-Stay Hospitals with Surgery, by Bed Size and Type of Control, 1978
(in Thousands)

Bed Size	Total	Discharges with Surgery					
		Total	Voluntary			Proprietary	Government
			Total	Church	Other		
All Discharges	1,061	301	215	69	146	28	59
Less Than 100 Beds	182	28	14	2	11	6	8
100-199	199	50	31	7	24	9	10
200-299	181	55	40	12	28	7	8
300-499	266	86	67	25	42	4	15
500 or More	233	82	63	23	41	1	18
			Percent Distribution				
All Discharges	100.0	28.4	20.3	6.5	13.8	2.6	5.6
Less Than 100 Beds	100.0	15.4	7.7	1.1	6.0	3.3	4.4
100-199	100.0	25.1	15.6	3.5	12.1	4.5	5.0
200-299	100.0	30.4	22.1	6.6	15.5	3.9	4.4
300-499	100.0	32.3	25.2	9.4	15.8	1.5	5.6
500 or More	100.0	35.2	27.0	9.9	17.6	—	7.7

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

Use by Type of Control

As among the aged, voluntary hospitals accounted for the major share of hospital services used by the disabled in 1978, 65.9 percent of the discharges and 68.7 percent of total days of care (Table 21). In contrast government hospitals had a higher percent, 24.4, of discharges than TDOC, 22.6 percent. The figures for proprietary hospitals were 9.8 percent and 8.7 percent, respectively. These differences reflected longer ALOS of voluntary hospitals, 10.5 days, than government, 9.3 days, and proprietary hospitals, 8.9 days.

Use by Bed Size of Hospitals

The ALOS of disabled enrollees in 1978 was 10.0 days (Table 22). ALOS increased steadily as hospitals increased in size. As shown in Table 22, at 250 or more beds the ALOS exceeded the overall average (10.0 days). As a result, hospitals of 250 or more beds accounted for 55 percent of discharges but 62 percent of TDOC. This pattern was similar to that shown by the aged.

Use by Surgical Patients by Bed-Size and Type of Control of Hospital

Of the 1.1 million discharges of disabled enrollees in 1978, 28.4 percent or 301,000 of them involved surgery (Table 23.) This is lower than for the aged (33.0 percent). The proportion of discharges with surgery increased with bed size, from 15.4 percent in hospitals with less than 100 beds to 35.2 percent in hospitals with 500 or more beds. This pattern held for voluntary, proprietary, and government hospitals. Voluntary hospitals accounted for 71 percent of all discharges with surgery, government hospitals, 20 percent, and proprietary hospitals, 9 percent. The ALOS for surgery cases was 9.8 days in hospitals with less than 100 beds and increased to 14.9 days in hospitals of 500 or more beds.

Use by Demographic Characteristics

Age: The rate of discharges with surgery increased with age, from 90 per 1,000 enrolled for those under 35 years of age to 120 per 1,000 for those 60-64 years of age (Table 24). The proportion of discharges with surgery in 1978 was 28.4 percent and was about the same as in 1977. The ALOS of surgical discharges by age varied by less than one day, 12.1 days for those 35-44 years of age and 13.0 days for ages 60-64 years.

Sex: The rate of discharges with surgery was one-third higher for women than men, 128 and 96 per 1,000 respectively. The proportion of discharges with surgery among women, 30.0 percent, was higher than among men, 27.2 percent. ALOS of men having surgery (12.9 days) was only 2 percent longer than that of women (12.6 days).

Race: The discharge rate of whites undergoing surgery in 1978 (111 per 1,000 enrollees) was 25 percent higher than for nonwhites (89 per 1,000) about the same difference as in 1977. The difference in the proportion of discharges with surgery was small, 28.5 percent for whites and 27.4 percent for nonwhites. Nonwhites had a 19 percent longer ALOS, 14.8 days, than whites, 12.4 days.

Region: The variation in the discharge rate with surgery by region was small, from 106 per 1,000 in the Northeast to 111 per 1,000 in the South. The range in the proportion of surgery was also small, 27.3 percent in the South and 30.3 in the Northeast. These rates and percentages are slightly lower than for the aged and the ranges are smaller. Among surgical discharges the ALOS in the Northeast was 14.9 days, or 41 percent more than in the West, 10.6 days.

Bed Size: As among the aged, the proportion of discharges with surgery increased with the size of the hospital as did the ALOS. This reflects the greater range and complexity of services available in larger hospitals.

Deaths in Short-Stay Hospitals

In 1978, 34,515 disabled enrollees or 3.3 percent of all discharges died in short-stay hospitals (Table 25). The proportion of discharges resulting from death increased with age. For those under 35 years of age, 1.3 percent of the discharges resulted from death and increased to 4.4 percent for those 60-64 years of age. The proportion of discharges resulting from death was 37 percent higher for men (3.7 percent) than women (2.7 percent). The proportion was 20 cent higher for persons of other races (3.7 percent) than for whites (3.1 percent).

The ALOS of those who died was 14 percent higher for women (14.3 days) than for men (12.5 days) and for other races (14.6 days) than for whites (12.8 days). ALOS for discharges resulting from death showed no clear relationship to age. The ALOS of persons discharged dead following surgery was 23.9 days, or 10.8 days longer than those discharged dead in the absence of surgery.[14]

Charges and Reimbursements in Short-Stay Hospitals, 1978

Total charges of disabled enrollees discharged from short-stay hospitals were $2.6 billion in 1978 (Table 26). Average charges per discharge and per day were $2,417 and $241, respectively. The charges per discharge for the aged, $2,396, are less despite the fact that the number of covered days per discharge

[14] See footnote 7.

TABLE 21
Number of Discharges of Disabled Enrollees from Short-Stay Hospitals with Surgery and Average Length of Stay with Surgery, by Demographic Characteristics and Bed Size, 1978
(Discharges in Thousands)

Characteristics	Discharges				
		With Surgery			
	Total	Number	Percent of Total	Per 1,000 Enrolled	Average Length of Stay
Total (All Areas)	1,061	301	28.4	108	12.8
Age					
Under 35	101	31	30.7	90	12.4
35-44	114	33	28.9	99	12.1
45-54	249	67	26.9	104	12.5
55-59	243	67	27.6	110	13.2
60-64	354	103	29.1	120	13.0
Sex					
Men	621	169	27.2	96	12.9
Women	440	132	30.0	128	12.6
Race					
White	895	255	28.5	111	12.4
All Other Races	146	40	27.4	89	14.8
Region					
Northeast	208	63	30.3	106	14.9
North Central	264	74	28.0	115	13.5
South	411	112	27.3	111	12.0
West	170	50	29.4	109	10.6
Bed Size					
Less Than 100 Beds	182	28	15.4	NA	9.8
100-199	199	50	25.1	NA	10.9
300-499	266	86	32.3	NA	13.2
500 or More	233	82	35.2	NA	14.9

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

NA — Not applicable

TABLE 22
Discharges by Death of Disabled Enrollees from Short-Stay Hospitals by Age, Sex, and Race, 1978

Age, Sex, and Race	Deaths			
	Number	Per 100 Medicare Discharges	Average Length of Stay	
			Total	With Surgery
All Persons	34,515	3.3	13.1	23.9
Age				
Under 35	1,275	1.3	14.9	24.8
35-44	2,145	1.9	12.9	21.3
45-54	6,660	2.7	12.5	22.0
55-59	8,675	3.6	13.0	25.0
60-64	15,760	4.4	13.3	24.5
Sex				
Men	22,675	3.7	12.5	23.3
Women	11,840	2.7	14.3	25.1
Race				
White	28,160	3.1	12.8	23.2
All Other Races	5,450	3.7	14.6	27.1

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

TABLE 23
Enrollment of Disabled, Discharges from Short-Stay Hospitals, Days of Care, Charges, and Reimbursements, by Demographic Characteristics, 1978
(Discharges and Days of Care in Thousands; Charges and Reimbursements in Millions)

Demographic Characteristics	HI Enrollment[1]	Discharges		Total Days of Care			Charges			Reimbursements			
		Number	Per 1,000 Enrolled	Number	Per 1,000 Enrolled	Per Discharge	Amount	Per Discharge	Per Day	Amount	Per Discharge	Per Covered Day	Per Enrollee
Total	2,793	1,061	380	10,638	3,809	10.0	$2,565	$2,417	$241	$1,788	$1,685	$172	$640
Age													
Under 35	345	101	294	1,032	2,993	10.2	265	2,613	257	191	1,891	193	554
35-44	335	114	341	1,100	3,280	9.6	258	2,261	235	185	1,623	175	552
45-54	647	249	385	2,384	3,687	9.6	568	2,287	238	397	1,594	171	614
55-59	609	243	398	2,459	4,038	10.1	590	2,433	240	408	1,679	170	670
60-64	857	354	413	3,664	4,273	10.4	883	2,492	241	606	1,712	169	707
Sex													
Men	1,763	621	352	6,034	3,423	9.7	1,497	2,411	248	1,020	1,643	174	579
Women	1,030	440	427	4,604	4,469	10.5	1,068	2,426	232	768	1,745	171	746
Race													
White	2,299	895	389	8,809	3,832	9.8	2,103	2,351	239	1,463	1,635	170	636
All Other Races	448	146	326	1,610	3,596	11.0	408	2,794	253	288	1,973	183	643
Region													
Northeast	597	208	348	2,503	4,194	12.0	632	3,039	252	416	2,000	172	697
North Central	642	264	412	2,813	4,381	10.7	655	2,480	233	483	1,830	177	752
South	1,006	411	409	3,799	3,778	9.2	814	1,982	214	551	1,341	147	548
West	457	170	372	1,444	3,158	8.5	450	2,650	312	329	1,935	235	720

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

[1] As of July 1, 1978.

TABLE 24
Number and Percent Distribution of Disabled Enrollees from Short-Stay Hospitals, Days of Care, Charges, and Reimbursements by Bed Size and Control, 1978
(Discharges and Days of Care in Thousands; Charges and Reimbursements in Millions)

Size and Type of Hospital Control	Discharges		Total Days of Care		Charges				Reimbursements			
	Number	Percent	Number	Percent	Amount	Per Discharge	Per Day	Percent of Total	Amount	Per Discharge	Per Covered Day	Percent of Total
Total	1,061	100.0	10,638	100.0	$2,565	$2,417	$241	100.0	$1,788	$1,685	$172	100.00
Bed Size												
Less than 50	56	5.3	407	3.8	65	1,161	160	2.5	45	804	117	2.5
50-99	127	12.0	989	9.3	184	1,453	186	7.2	124	976	129	6.9
100-149	102	9.6	884	8.3	181	1,766	205	7.1	124	1,216	144	6.9
150-199	96	9.0	879	8.3	191	1,978	217	7.4	131	1,365	152	7.3
200-249	95	9.0	940	8.8	221	2,325	235	8.6	152	1,600	166	8.5
250-299	86	8.1	887	8.3	207	2,396	233	8.1	140	1,628	162	7.8
300-399	143	13.5	1,500	14.1	370	2,592	247	14.4	254	1,776	173	14.2
400-499	124	11.7	1,371	12.9	354	2,862	258	13.8	252	2,032	188	14.1
500-749	156	14.7	1,814	17.1	508	3,248	280	19.8	354	2,269	200	19.8
750 or More	76	7.2	969	9.1	286	3,763	295	11.2	212	2,789	227	11.9
Type of Control												
Voluntary	699	65.9	7,307	68.7	1,791	2,563	245	69.8	1,245	1,781	174	69.6
Church	212	20.0	2,231	21.0	528	2,487	237	20.6	370	1,745	169	20.7
Other	487	45.9	5,076	47.7	1,263	2,596	249	49.2	874	1,795	176	48.9
Proprietary	104	9.8	924	8.7	242	2,332	262	9.4	155	1,490	170	8.7
Government	259	24.4	2,408	22.6	532	2,056	221	20.7	388	1,498	168	21.7

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

TABLE 25
Number and Percent Distribution of Disabled Persons Discharged from Short-Stay Hospitals, Number of Discharges, Days of Care, Charges and Reimbursements by Number of Stays, 1978 (Persons and Days of Care in Thousands; Charges and Reimbursements in Millions)

	Persons Discharged		Total Days of Care			Charges			Reimbursements		
Number of Stays	Number	Percent	Number	Per Person	Percent	Amount	Per Person	Percent	Amount	Per Person	Percent
All Stays	626	100.0	10,638	17.0	100.0	$2,565	$4,089	100.0	$1,788	$2,854	100.0
1 Stay	396	63.3	3,920	9.9	36.8	919	2,321	35.8	632	1,595	35.3
2 Stays Only	131	20.9	2,738	20.9	25.7	659	5,027	25.7	465	3,552	26.0
3 Stays or More	99	15.8	3,990	40.3	37.5	980	9,900	38.2	668	6,950	37.4

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

TABLE 26
Number of Discharged Disabled Enrollees by Number of Stays and Age, Sex, and Race, 1978

	All Stays		Multiple Stays		
Age, Sex, and Race	Number of Persons (in Thousands)	Per 1,000 Enrolled	Number of Persons (in Thousands)	Per 1,000 Enrolled	Percent of All Stays
All Persons	626	224	231	83	36.9
Age					
Under 35	56	162	21	61	37.5
35-44	64	191	25	75	39.1
45-54	143	221	53	82	37.1
55-59	143	235	52	85	36.4
60-64	219	256	79	92	36.1
Sex					
Men	367	208	134	76	36.5
Women	260	252	97	94	37.3
Race					
White	524	228	195	85	37.2
All Other Races	90	201	31	69	34.4

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

was almost a day longer. The lower average *per diem* charges for the aged, $223, suggests that the disabled may have received more intensive care during hospitalization. Reimbursements were $1.8 billion or 69.7 percent of total charges. Average reimbursements per disabled enrollee ($640) were 10 percent higher than per aged enrollee ($582). This reflects mainly the higher discharge rate among the disabled (380 per 1,000 enrollees to 340 per 1,000).

Charges and Reimbursements by Demographic Characteristics

Age: Disabled persons under 35 years of age had the highest charges per discharge and charges per day. Charges per discharge were $2,613 for those under 35 years of age, for those 35-44 years of age the average was $2,261 and rose to $2,492 for those 60-64 years of age. Similarly, charges per day were $257 for the under 35 age group and increased from $235 to $241 for the age groups from 35-44 to 60-64. Higher charges to those under age 35 were probably related to the greater proportion of patients with the end-stage renal disease (ESRD) in this group. Short-stay hospital charges of ESRD patients were far higher than others because they received kidney transplants and dialysis. In 1978, charges for those under age 35 with ESRD accounted for one-third of charges of all disabled under 35 years of age. The comparable figure for persons age 35-64 with ESRD was only14 percent. The 36,000 persons with ESRD were less than 0.2 percent of disabled enrollees in 1978.

Reimbursement per enrollee increased with age primarily because of the increase with age in discharges per 1,000 enrolled from 294 per 1,000 for those under age 35 to 413 per 1,000 for those 60 to 64 years of age.

Sex: Charges per discharge were about the same for women, $2,426 as men, $2,411. This was the result of higher charges per day of men, $248, than women $232, offset by a higher ALOS of women, 10.5 days, than men, 9.7 days.

Reimbursements per woman enrollee ($746) were 29 percent higher than for men ($579). This was the result of both a 21 percent higher discharge rate for women (427 per 1,000 to 352 for men) and a 6 percent higher reimbursement per discharge ($1,745 to $1,643).

Race: Charges per day for nonwhites, $253, was 6 percent higher than for whites, $239. Charges per discharge of nonwhites was $2,794 or 19 percent higher than for whites, $2,351. This difference reflected the higher charges per day of nonwhites and the longer ALOS of nonwhites, 11.0 days, than whites, 9.8 days.

Reimbursements per disabled enrollee were nearly identical for whites, $636, and nonwhites, $643. Though whites had a 19 percent higher discharge rate, nonwhites had a 21 percent higher reimbursement per discharge. The higher proportion of nonwhites with ESRD requiring kidney transplants and dialysis may account for their higher charges and reimbursements per discharge. In 1978, 14 percent of the discharges of nonwhites were of persons having ESRD; the comparable figure for whites was 6 percent. Among white disabled persons enrolled for hospital insurance, persons with ESRD constituted 1.1 percent of the total; among nonwhites 2.2 percent were persons with ESRD.[15]

Residence: Reimbursements rather than charges are used to make comparisons by region to reflect differences in regional price levels which preclude making the inference that differences in charges indicate differences in the amount of resources used to provide care. Hence, comparisons of variation in reimbursements reflect differences in the amount expended by the program on behalf of patients in the different regions and reflect some unknown combinations of the effects of differences in price/cost levels, and geography in medical practices.

Reimbursements per enrollee were highest in the North Central States, $752, slightly more than the West, while the South was far less, $548. Reimbursements per enrollee in the North Central States reflected a combination of the highest discharge rate, 412 per 1,000 and an above average reimbursement per day, $177, and per discharge $1,830. Southern residents had nearly as high a discharge rate but a far lower reimbursement per day, $147, and per discharge, $1,341. Reimbursements per day were highest in the West, $235, but the West also had the lowest ALOS.

Charges and Reimbursements by Hospital Size and Type of Control

Like the aged, disabled persons discharged from smaller hospitals accounted for a lower proportion of reimbursement than for discharges and days of care (Table 27). In 1978, hospitals with less than 300 beds accounted for only 40 percent of reimbursements, compared to 53 percent of the discharges, and 47 percent of the days of care. Hospitals with 300 or more beds had a higher proportion of reimbursements, 60 percent, than discharges, 47 percent, or days of care, 53 percent. These patterns were the result of increasing reimbursements per day and increasing ALOS with increasing bed size. As noted earlier, larger hospitals provide a wider and more complex range of services which cost more.

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[15] As of July 1, 1978. Unpublished tabulations.

TABLE 27
Number and Percent Distribution of Disabled Enrollees from Short-Stay Hospitals, Days of Care, Charges, and Reimbursements by Bed Size and Control, 1978
(Discharges and Days of Care in Thousands; Charges and Reimbursements in Millions)

Size and Type of Hospital Control	Discharges		Total Days of Care		Charges				Reimbursements			
	Number	Percent	Number	Percent	Amount	Per Discharge	Per Day	Percent of Total	Amount	Per Discharge	Per Covered Day	Percent of Total
Total	1,061	100.0	10,638	100.0	$2,565	$2,417	$241	100.0	$1,788	$1,685	$172	100.00
Bed Size												
Less than 50	56	5.3	407	3.8	65	1,161	160	2.5	45	804	117	2.5
50-99	127	12.0	989	9.3	184	1,453	186	7.2	124	976	129	6.9
100-149	102	9.6	884	8.3	181	1,766	205	7.1	124	1,216	144	6.9
150-199	96	9.0	879	8.3	191	1,978	217	7.4	131	1,365	152	7.3
200-249	95	9.0	940	8.8	221	2,325	235	8.6	152	1,600	166	8.5
250-299	86	8.1	887	8.3	207	2,396	233	8.1	140	1,628	162	7.8
300-399	143	13.5	1,500	14.1	370	2,592	247	14.4	254	1,776	173	14.2
400-499	124	11.7	1,371	12.9	354	2,862	258	13.8	252	2,032	188	14.1
500-749	156	14.7	1,814	17.1	508	3,248	280	19.8	354	2,269	200	19.8
750 or More	76	7.2	969	9.1	286	3,763	295	11.2	212	2,789	227	11.9
Type of Control												
Voluntary	699	65.9	7,307	68.7	1,791	2,563	245	69.8	1,245	1,781	174	69.6
Church	212	20.0	2,231	21.0	528	2,487	237	20.6	370	1,745	169	20.7
Other	487	45.9	5,076	47.7	1,263	2,596	249	49.2	874	1,795	176	48.9
Proprietary	104	9.8	924	8.7	242	2,332	262	9.4	155	1,490	170	8.7
Government	259	24.4	2,408	22.6	532	2,056	221	20.7	388	1,498	168	21.7

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

The proportions of discharges, days of care, and reimbursements were highly related for each type of hospital control. For voluntary hospitals the proportions were. reimbursements, 70 percent; discharges, 66 percent; and days of care, 69 percent. Proprietary hospitals accounted for 9 percent of reimbursements, 10 percent of discharges, and 9 percent of days of care. The proportions for government hospitals were: reimbursements, 22 percent; discharges, 24 percent; and days of care, 23 percent. Government hospitals had the lowest reimbursement per day.

Discharges by Person

In 1978, there was an average of 1.7 discharges per disabled person from short-stay hospitals or 1,061,000 discharges by 626,000 persons (Table 28). Nearly 37 percent of these persons had two or more hospital stays during the year. They accounted for 63 percent of days of care, 64 percent of charges, and 63 percent of reimbursements.

Discharges of Persons: Multiple Stays

In 1978, of the 626,000 disabled persons who were discharged from short-stay hospitals, 231,000 or 37 percent had more than one stay during the year (Table 29). Though the rates of persons being hospitalized are similar for the aged (228 per 1,000) and the disabled (224 per 1,000), the multiple hospitalization rate among the disabled (83 per 1,000), was 17 percent higher than for the aged (71 per 1,000). Thus, the probability of being rehospitalized was also greater for the disabled (37 percent) than for the aged (31 percent).

The proportion of persons discharged more than once during the year varied little by age (ranging from 39.1 percent for those age 35 to 44 to 36.1 percent for those age 60-64), by sex (37.3 percent of the women to 36.5 percent of the men), or by race (whites had an 8 percent higher proportion, 37.2 percent, than other races, 34.4 percent). The rate of persons discharged

TABLE 28
Number and Percent Distribution of Disabled Persons Discharged from Short-Stay Hospitals, Number of Discharges, Days of Care, Charges and Reimbursements by Number of Stays, 1978
(Persons and Days of Care in Thousands; Charges and Reimbursements in Millions)

Number of Stays	Persons Discharged		Total Days of Care			Charges			Reimbursements		
	Number	Percent	Number	Per Person	Percent	Amount	Per Person	Percent	Amount	Per Person	Percent
All Stays	626	100.0	10,638	17.0	100.0	$2,565	$4,089	100.0	$1,788	$2,854	100.0
1 Stay	396	63.3	3,920	9.9	36.8	919	2,321	35.8	632	1,595	35.3
2 Stays Only	131	20.9	2,738	20.9	25.7	659	5,027	25.7	465	3,552	26.0
3 Stays or More	99	15.8	3,990	40.3	37.5	980	9,900	38.2	668	6,950	37.4

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

TABLE 29
Number of Discharged Disabled Enrollees by Number of Stays and Age, Sex, and Race, 1978

Age, Sex, and Race	All Stays		Multiple Stays		
	Number of Persons (in Thousands)	Per 1,000 Enrolled	Number of Persons (in Thousands)	Per 1,000 Enrolled	Percent of All Stays
All Persons	626	224	231	83	36.9
Age					
Under 35	56	162	21	61	37.5
35-44	64	191	25	75	39.1
45-54	143	221	53	82	37.1
55-59	143	235	52	85	36.4
60-64	219	256	79	92	36.1
Sex					
Men	367	208	134	76	36.5
Women	260	252	97	94	37.3
Race					
White	524	228	195	85	37.2
All Other Races	90	201	31	69	34.4

Source: Office of Statistics and Data Management, Bureau of Data Management and Strategy, Health Care Financing Administration.

from hospitals during the year increased steadily by age from 162 to 256 per 1,000 enrollees for ages under 35 and ages 60 to 64, respectively. For multiple stays, the rate also increased with age — the comparable figures were 61 and 92 per 1,000 enrollees. The rate of women discharged from hospitals was 252 per 1,000, 21 percent higher than for men, 208 per 1,000. For multiple stays, the difference was similar, 24 percent higher for women (94 per 1,000 enrollees) than for men (76 per 1,000). Stays per 1,000 enrollees were 13 percent more for whites (228) than for nonwhites (201). For multiple stays the rate among whites (85 per 1,000 enrollees) was 23 percent more than for nonwhites (69 per 1,000).

Conclusion

Between 1977 and 1978, Medicare reimbursements for short-stay hospital services to HI enrollees increased 14.1 percent, (13.6 percent for the aged and 18.6 percent for the disabled). This represents a continuing of the trend of large increases in amounts paid for short-stay hospital services since the start of Medicare. Since 1967, reimbursements for the aged rose an average annual rate of 15.9 percent and, since 1974, the rate was 30.3 percent for the disabled.

The primary cause of rising Medicare payments for hospital services has been the rapid increase in their cost as measured by Medicare reimbursements per covered day. In 1967, the average reimbursement per day was $40; by 1978, it was $164 per day — an average annual increase of 13.7 percent. In comparison, the GNP deflator increased at a rate of only 6.1 percent (Freeland and Schendler). The rising *per diem* cost of hospital services accounted for 82 percent of the rise in Medicare hospital reimbursements since 1967. Increases in the utilization rate did not account for a significant portion of rising Medicare expenditures. However, the growth in the number of aged enrollees (at a rate double that of the general population) and the even faster rate of growth in the number of disabled enrollees caused significant increases in total use of hospital services by Medicare enrollees and in program expenditures.

The usage rate, measured by total days of care per 1,000 enrollees, among the aged increased between 1967 (3,701 days per 1,000) and 1969 (3,947 days per 1,000) before stabilizing and settling back, in 1971, to the 1967 rate where it remained through 1978. The stable usage rate resulted from offsetting trends: an increasing discharge rate offset by a declining ALOS. A similar pattern for the disabled also seems to be taking place. Despite the relatively stable useage rate, the number of hospital days used by aged Medicare enrollees increased from 72.1 million days in 1967 to 87.5 million days in 1978 (an average annual increase of 1.8 percent). In 1967, the aged accounted for about 32 percent of the inpatient hospital days. By 1978, when the 10.6 million days used by the disabled are included, Medicare enrollees used 98.2 million days of hospital care — or 3 of every 8 days of care furnished in short-stay hospitals. Given the further aging of the aged population as well as its growth, further increases seem inexorable. The disabled, especially persons with ESRD are even heavier users of hospital services and resources, adding further to the prospect of increased use by Medicare enrollees.

In 1978, short-stay hospital services accounted for 70 percent of all Medicare expenditures. Clearly, containing rising hospital costs is vital to slowing rising Medicare expenditures. Despite the recognition given to this problem, such as the hospital industry's voluntary effort, there has been little success. As shown in this report, 47 percent of the increase between 1967 and 1978 in the *per diem* reimbursement made by Medicare on behalf of aged patients was attributable to the price inflation in the general economy. Only 11 percent was due to the costs of hospital inputs outrunning the general inflation of prices. Obviously, control of cost increases in the general economy would make a major contribution to containing rising hospital expenditures. However, this report also shows that increased use of resources to provide a day of care (i.e. intensity of services) accounted for 42 percent of the increase in Medicare's average *per diem* reimbursement. Increased resources include more complex equipment and procedures and more trained persons to handle them. Data (AHA, Panel Survey) show that labor-related inputs per patient day increased at an average annual rate of 2.6 percent per year. The number of full-time equivalent personnel required to provide daily care for each 100 short-stay

hospital patients increased from 241 in 1967 to 329 in 1978, an increase of 37 percent. However, the use of nonlabor factors increased at an even greater rate. Nonlabor inputs per patient-day increased at an average annual rate of almost 8 percent between 1967 and 1978. From 37 percent of total hospital expenses in 1967, nonpayroll expenses increased to over 50 percent in 1978. The data suggest that the amount of resources used to produce an "average" day of hospital care has been increasing at a significant rate. Though the general inflation rate may be beyond the control of hospital administrators, the amount of resources used to deliver hospital care can be addressed with great potential savings.

In addition to raising questions about the direction of in-hospital efficiencies, data also suggest that the distribution of services and facilities among hospitals may not be optimal (Ruther). These findings point up that utilization control is only a small aspect of controlling rising hospital expenditures (Dobson, *et al.*, 1978). Efforts to control unnecessary hospital days by the Professional Standards Review Organization (PSRO) "had a small impact"... [on reducing]... "hospital days of care per 1,000 aged Medicare beneficiaries" (PSRO, 1979).

The bleakness of the prospects for bringing the rate of increase in hospital costs closer to that of the general economy seem borne out by later data. Reimbursement data (based on discharges) from the same series used in this report are not available for 1979 or 1980. However, another series of reimbursement data based on short-stay hospital bills for services incurred through calendar year 1980 are available (Current Utilization Series).

Using preliminary data, Medicare short-stay hospital bills processed through June 1981 for all enrollees, indicated the following reimbursement amounts in billions: $14.4 in 1978; $16.4 in 1979; and $19.4 in 1980. Thus, between 1978 and 1979 short-stay hospital reimbursements rose about 14 percent and another 18 percent between 1979 and 1980. Also, the 1980 figure which is based on bills processed 6 months later is understated when it is compared to the 1979 figure which is based on bills processed 18 months later. As a result, when all bills reimbursed for 1980 are counted, the 1979 to 1980 increase will be even higher. Further, HCFA actuaries estimate Medicare reimbursements for inpatient hospital services may rise at an average annual rate of 15.3 percent to $46.1 billion between 1980 and 1985 (Medicare Cost Estimates, 1981).

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Appendix A: The Statistical System of the Medicare Program

The primary objective of the Medicare statistical system is to provide data to measure and evaluate program operation and effectiveness. Benefit payment operations furnish information about the amount and kind of hospital and medical care services used by disabled persons and persons age 65 and over, as well as the expenditures for such services. The applications by hospitals, SNFs, HHAs, independent laboratories, and suppliers of portable X-ray and outpatient physical therapy services to participate in the program provide data on the characteristics of such providers of services. The claim number assigned to each individual serves as the link between the services used under Medicare and the demographic characteristics of individual beneficiaries.

The Basic Records

The statistical system is based on four related computer records: the health insurance master file, provider record, hospital insurance (Part A) utilization record, and the medical insurance (Part B) payment record.

The Health Insurance Master File

The health insurance master file identifies each aged and disabled person eligible for health insurance benefits and indicates whether he or she is entitled to HI benefits, to SMI benefits, or to both. The entitlement record provides the population data for each part of the program which serves as the base for the computation of a variety of utilization rates limited only by its demographic content.

Provider Record

Every hospital, HHA, SNF, independent clinical laboratory, and supplier of portable X-ray or outpatient physical therapy services must apply for participation in the Medicare program. Data on the application forms are stored in the central provider record and are updated as facilities are recertified periodically, as new ones apply for participation, and as some leave the program. When the information in this provider file is combined with utilization data, it relates the characteristics of facilities and agencies that provide care to the kinds and amounts of services used by persons insured under Medicare.

Utilization Record for Hospital Insurance

The administration of the HI program requires that two things be known about each person at the time of admission to a hospital — the individual's entitlement under the program and the extent to which he or she has used the benefits available.

When a patient is admitted to a hospital, the admission section of the inpatient hospital admission and billing form is completed by the hospital and forwarded through its intermediary to the Health Care Financing Administration's (HCFA's) central record. As soon as the record is checked, normally in less than 24 hours, the intermediary is informed of the patient's benefit status and of the number of days of inpatient care to which he or she is entitled during his current benefit period.

This information is then forwarded to the hospital. At discharge, the hospital completes the billing section of the form and sends it to the intermediary for payment. When payment is approved, the intermediary forwards the claim to HCFA for inclusion in the central record.

As part of this process, information on diagnoses and surgical procedures is coded for a 20-percent sample of beneficiaries based on specific combinations of digits in the health insurance claim number. Admission and billing forms are handled in a comparable manner by home health agencies and skilled nursing facilities. The outpatient billing form is also transmitted to HCFA for entry in the central record after the bill is approved for payment by the intermediary.

All the information on utilization experience in hospitals and SNFs that is needed to administer the "benefit period" provision is recorded centrally. This information includes stays in certain nonparticipating institutions that meet the definition of a hospital or SNF under the law and days of care not covered or reimbursable under the program.

Each admission and billing form contains both the beneficiary's claim number and the provider's identification number. The resulting record can be readily matched to the beneficiary files and the provider files. By this process, a statistical tape record is created for the sample of insured persons. It contains the information needed for tabulation from the three files related to HI use.

Payment Record for Medical Insurance

Payment or reimbursement under the SMI program is made only after the carrier receives bills with allowed charges in excess of $60 during calendar year 1978, the period covered in this report.

For the enrolled population, carries need to know from a central source the amount of the deductible that has been met; thereafter, during the remainder of the calendar year, the only additional information required from the Health Care Financing Administration for reimbursement or payment purposes is whether the person is still enrolled under the SMI program.

The administration and operation of the program requires accurate and complete information of the amounts paid by the carriers for physician services and for other services and supplies under this part of the program. To meet these needs, carriers furnish a payment record consisting of tape, punched card or other machine-readable form of each bill paid. A bill is defined as a request for payment from, or on behalf of, a beneficiary as the result of services provided by a single physician or supplier.

Appendix B: Provisions of the Law and Regulations

The Medicare program, enacted on July 30, 1965 as Title XVIII of the Social Security Act, became effective on July 1, 1966. The 1972, Public Law 92-603 made major changes in the program's provisions. Effective July 1, 1973, the name of the Medicare program was officially changed to Health Insurance for the Aged and Disabled (the Social Security Act as amended through December 31, 1978).

Effective July 1, 1973, Medicare coverage was extended to disabled beneficiaries under the social security and railroad retirement programs and to persons under 65 years of age who require dialysis or a kidney transplant for end-stage renal disease (ESRD).

The program makes available two separate but complementary insurance programs: 1) hospital insurance that covers nearly all persons 65 years of age and over, disabled beneficiaries under 65 years of age who are entitled to benefits for at least 24 consecutive months, and covered workers and their dependents with ESRD who require renal dialysis or a kidney transplant, and 2) supplementary medical insurance that covers those persons who voluntarily pay the premiums. Beginning July 1973, most persons 65 years of age and over who are otherwise ineligible for hospital insurance may enroll voluntarily and pay the premium for hospital coverage if they are enrolled for supplementary medical insurance.

Hospital Insurance Program

Following a period of hospitalization, the hospital insurance (HI) program pays for part of the cost of inpatient hospital care and related health care services provided by skilled nursing facilities (SNFs), formerly termed extended-care facilities, and home health agencies (HHAs). For the services to be covered, they must be provided by institutions and organizations that have been certified as qualified providers of services, and the providers must have signed an agreement to participate in the program. (Code of Federal Regulations, 1980).[1]

Benefits

The law also provides limits on services which may be covered under the HI program. These limits are based on the concept of a "benefit period." A benefit period begins with the first day of hospitalization and ends when the individual has not been a bed patient in a hospital or SNF for 60 consecutive days.

The law establishes cost-sharing by the individual through deductible and coinsurance payments. The Secretary of the Department of Health and Human Services is required each year to determine the deductible amount by a formula specified by law. The formula is based on the average *per diem* rate for inpatient services furnished to beneficiaries during the preceding calendar year. The deductible amount tends to approximate the current cost of one day in a hospital. The coinsurance amount for hospital inpatient care is set at one-fourth of the deductible, for lifetime reserve days it is set at one-half of the deductible, and for skilled nursing facility services it is set at one-eighth of the deductible.

Inpatient Hospital Benefits

Covered hospital services include room and board in accommodations containing from two to four beds, nursing services (except for private duty nursing), drugs and biologicals, and other services ordinarily furnished by a hospital to its patients.

The program does not cover the services of physicians, including staff radiologists, anesthesiologists, pathologists, and psychiatrists, except for services provided by interns or residents under approved teaching programs.

The program pays for the "reasonable costs" of covered services in a participating hospital for up to 90 days in a benefit period. Full payment is made for the first 60 days of hospitalization less a deductible applicable to each benefit period. The deductible, which is adjusted each year, was $144 in 1978. For each of the remaining 30 days in the benefit period, the patient pays a coinsurance amount equal to one-fourth of the deductible.

Each HI beneficiary also has a "lifetime reserve" of 60 additional hospital days which can be used at his or her option when the 90 days covered in a benefit period are exhausted. In 1978, lifetime reserve days were subject to a copayment of $72 per day (equal to one-half of the deductible).

The cost of the first three pints of blood (or equivalent amounts of packed red blood cells) furnished a patient during a benefit period is also deductible, unless the patient arranges for replacement. Charges for any additional blood are covered under the program as are charges for blood administration, storage, etc.

The program also pays for emergency services in a nonparticipating hospital. Each nonparticipating hospital providing emergency services may elect to claim payments from the Medicare program for emergency services rendered beneficiaries in a given year. If the hospital elects this option, reimbursement is made as just described. If the hospital elects not to bill the program, the beneficiary claims direct payment and submits the itemized bill. In this case, reimbursement is based on reasonable charges for covered services and amounts to 60 percent of reasonable charges for room and board, plus 80 percent of such charges for ancillary services. Payment is subject to the deductible and coinsurance provisions of the law.

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[1] For regulations pertaining to certification requirements, see *Code of Federal Regulations, 1980.* An exception exists under special provisions for hospitals certified to provide only emergency services.

Hospital insurance benefits also include reimbursement for inpatient tuberculosis and psychiatric hospital services. However, there is a lifetime limit of 190 days of care in the psychiatric hospital. When a person in a participating psychiatric hospital becomes entitled to hospital insurance, the number of days he or she was an inpatient in the 150-day period prior to eligibility is deducted from the individual's days of entitlement to inpatient psychiatric care in that benefit period, but not from the lifetime limitation.

Hospital insurance benefits have been extended to cover payments for inpatient services furnished by a foreign hospital, if it is closer or more accessible to the beneficiary's residence than a U.S. hospital. For benefits to be payable, the beneficiary must be a U.S. resident and the foreign hospital must be accredited by, or have standards equivalent to, the Joint Commission on Accreditation of Hospitals (JCAH).

Skilled Nursing Facility Benefits

Covered post-hospital care furnished by an SNF includes nursing care, room and board, physical, occupational, or speech therapy, drugs and biologicals, medical services of an intern or resident-in-training of a hospital having a transfer agreement with the SNF, and other necessary health care services generally provided by such facilities.

The program pays for the reasonable costs of all covered inpatient services in participating SNFs for up to 100 days in a benefit period. Benefits are payable only following discharge from a hospital after a stay of 3 or more consecutive days; generally the admission to the facility must occur within 14 days of hospital discharge.[2] However, a period of up to 28 days after discharge from a hospital is permitted when the patient's medical condition or shortage of beds delays the admission date. Full payment is made for the first 20 days. For each of the remaining 80 days, the patient pays a coinsurance amount per day equal to one-eighth of the inpatient hospital deductible ($18 in 1978).

For SNF services to be covered, a physician must certify that the patient needs daily skilled nursing care or skilled rehabilitation services and must order the services. The 1972 amendments include a provision for advance approval of SNF services, whereby the Secretary[3] establishes by medical condition when a patient will require skilled nursing care services after hospitalization.

Accordingly, a patient's physician may certify the need for an SNF and submit a plan, in advance of admission, as to the type of services to be provided. The plan will be presumed to be the type of covered care furnished by an SNF.

Post-Hospital Home Health Benefits

Covered home health services may include part-time or intermittent nursing care, physical, occupational, or speech therapy, part-time or intermittent services of a home health aide, medical supplies (other than drugs and biologicals) and the use of medical appliances, and, in certain cases, services of an intern or resident-in-training of a teaching hospital. The services must be furnished by or under the auspices of an approved HHA.

Coverage under HI provides for payment of the reasonable cost of up to 100 home health visits after the beginning of one benefit period and before the beginning of the next.[4] There is no deductible and no coinsurance. The visits must occur within a year following a beneficiary's most recent discharge after a hospital stay of at least three consecutive days or from a covered stay in an SNF. The home health services must be necessary for further treatment of a condition for which the patient received services in the hospital or SNF. A home health plan must be established by the patient's physician within 14 days after the discharge. The 1972 amendments include a provision for advance approval of home health coverage similar to that provided for skilled nursing care services.

Supplementary Medical Insurance Program

The supplementary medical insurance (SMI) program provides coverage for a variety of medical services and supplies furnished by physicians or others in connection with physicians' services, outpatient hospital services, and home health services. Individuals participate voluntarily in the program. Premiums are paid by or on behalf of all beneficiaries and by the Federal Government from general revenues.

Benefits

Physicians' services covered under the program include visits to the home, office, hospital, and other institutions. The program also pays for other services and supplies, such as drugs and biologicals that cannot be self-administered, if they are furnished as a

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[2] The Omnibus Reconciliation Act of 1980 (P.L. 96-499) changed the period during which admission to a SNF must be effected to 30 days.

[3] In 1972, this referred to the Secretary of the Department of Health, Education, and Welfare. With the reorganization of 1980, the Medicare program was placed under the direction of the Secretary of the Department of Health and Human Services.

[4] The Omnibus Reconciliation Act of 1980 (P.L. 96-499) removed the limit on home health visits and the 3 day prior hospitalization requirement effective July 1, 1981.

part of a physician's professional service. It also covers diagnostic X-ray tests, diagnostic laboratory tests and other diagnostic tests, X-rays, radium and radioactive isotope therapy, splints, casts, and other devices used for reduction of fractures and dislocations, purchase or rental of durable medical equipment, ambulance service, and prosthetic devices that replace all or part of an internal organ. Home health visits provided by a certified HHA in accordance with a home health plan established by the patient's physician are also covered. (No prior hospitalization is necessary.) Payment may be made for up to 100 home health visits in a calendar year without regard to similar services received under the HI program.[5]

Hospital services incidental to physicians' services rendered to outpatients and outpatient speech and physical therapy services are also covered. In addition, effective July 1, 1973, the 1972 amendments provided for services of a physical therapist in independent practice furnished in the office or the patient's home, under a physician's plan. Reimbursement would be limited to not more than $100 of incurred expenses in a calendar year.[6]

Some services of licensed chiropractors are covered. Covered services are limited to treatment by means of manual manipulation of the spine to correct a subluxation (partial dislocation) demonstrated by X-ray.

In each calendar year through 1972, a $50 deductible had to be satisfied before payment could be made under the SMI program. In 1973, the deductible was raised to $60, and on January 1, 1982, it was raised to $75. Bills count toward the deductible on the basis of incurred rather than paid expenses; only charges allowed under the program count toward the deductible. To preclude the possbility of a beneficiary having to meet a deductible twice in a short period of time, a "carryover" provision is applied. Accordingly, covered expenses incurred in the last quarter of the year and applied to the deductible in that year are also credited toward the deductible for the following year.[7]

After the deductible has been met, the SMI program pays for 80 percent of the allowed (reasonable) charges for covered physician services and most other medical services. However, deductible and coinsurance requirements do not apply to the services of radiologists and pathologists furnished to hospital inpatients. "Reasonable" charges for such services are reimbursed.[8]

When an independent laboratory bills patients directly and accepts assignment, the Secretary of the Department of Health and Human Services is authorized to negotiate a payment rate with the laboratory for the diagnostic tests it provides Medicare beneficiaries. Reimbursement on assigned bills is made at 100 percent of the negotiated rate; the deductible and coinsurance requirements do not apply. Hospital services incidental to outpatient care and home health services are subject to the deductible[9] and are reimbursed on the basis of 80 percent of reasonable costs. However, coinsurance payments for home health services were eliminated after December 1972.

The law sets special limits on the payment which may be made for outpatient treatment of mental illness; recognition of incurred expenses is limited to the lesser of $312.50 or 62.5 percent of actual expenses in a calendar year. Since only 80 percent of allowed charges may be reimbursed, the effect is to limit payment to $250 or 50 percent of the allowed charges in any year after the deductible has been met, whichever is less.

Eligibility

Hospital Insurance

Almost all persons 65 years of age and over are eligible for benefits under the HI program. Included are those entitled to monthly social security cash benefits or payments from the railroad retirement system. Further, a special transitional provision granted eligibility for certain persons who did not qualify for monthly cash benefits on the basis of their own covered employment or as dependents or survivors of insured workers. The provision applied, generally, to a person 65 years of age and over who 1) attained age 65 before 1968, or 2) attained age 65 after 1967 with not less than three quarters of social security coverage, whenever acquired, for each calendar year elapsing after 1966 and before the year in which he or she attained age 65. For persons who reached age 65 after 1968, the amount of work credits (quarters of coverage) needed increased by three quarters each year — six quarters were needed by those who reached age 65 in 1969, nine by those who reached age 65 in 1970 and so on. The transitional provision does not apply to persons who reach 65 years of age after 1974.

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[5] The Omnibus Reconciliation Act of 1980 (P.L. 96-499) removed the limit on the number of visits and eliminated the application of the SMI deductible to HHA services under SMI.

[6] The Omnibus Reconciliation Act of 1980 (P.L. 96-499) increased the limit to $500 starting Jan. 1, 1982.

[7] The Omnibus Budget Reconciliation Act of 1981 (P.L. 97-35) increased the SMI deductible. The carryover provision was eliminated by P.L. 97-35 effective Jan. 1, 1982. Expenses applied toward the deductible in any one calendar year must have been incurred in that year.

[8] Under the Omnibus Reconciliation Act of 1980 (P.L. 96-499), effective June 1981, 100 percent of reasonable charges for these services were paid only if physicians accepted assignment.

[9] See footnote 5.

Hospital insurance protection under certain circumstances can be retroactive for as many as as 12 months before the month an individual files an application for entitlement. For example, an individual may apply 11 months after attaining age 65 and still be entitled to benefits from the month he or she attained age 65.

Effective July 1, 1973, disabled persons entitled for not less than 24 consecutive months to cash benefits under the social security or railroad retirement programs are eligible for benefits under the HI program.[10] Those covered include disabled workers under 65 years of age, disabled widows and disabled dependent widowers between 50 and 65 years of age, women 50 years of age, and over entitled to mothers' benefits who for 24 months met requirements for disability benefits but did not file a claim, and disabled beneficiaries 18 years of age and over who became disabled before age 22. A person must be disabled for 5 months before disability benefits can begin. Medicare coverage begins with the 30th month after the first full calendar month of disability.

Hospital insurance protection is available to all persons who are currently or fully insured or entitled to monthly social security benefits and to their spouses or dependent children who have ESRD and require renal dialysis or a kidney transplant. Eligibility for coverage begins with the third month after a course in renal dialysis begins or before this qualifying dialysis period for ESRD beneficiaries receiving kidney transplants. Eligibility ends with 36th month after the person had a kidney transplant or terminated dialysis.

The law now permits persons attaining age 65 who are ineligible for HI either as cash beneficiaries or under the transitional provisions to voluntarily enroll for hospital coverage. Coverage under this provision was effective July 1, 1973, and the monthly premium originally set at $33 was $63 on July 1, 1978. The premium represents the estimated *per capita* cost for services furnished under the hospital insurance program. Individuals may enroll in the HI program only if they enroll in the SMI program as well. Enrollment periods for hospital protection were the same as the initial and general enrollment periods under SMI.

Persons who retired from Federal service after July 1, 1960, and had the opportunity to be covered under the Federal Employees Health Benefits Act of 1959 are ineligible for HI benefits under the transitional provisions. Also ineligible are aliens with less than 5 years of continuous residence in the United States and those persons convicted of crimes against the security of the United States.

[10]The Social Security Amendments of 1980 (P.L. 96-265) removed the consecutive months requirement, effective 12/1/80. Months from previous periods of disability benefit entitlement may be counted in determining when the 24-month qualifying period requirement is met provided the current onset begins within certain time limits following the earlier period of entitlement.

Supplementary Medical Insurance

Persons entitled to benefits under the HI program, aged retired Federal employees, aged aliens residing in the United States, and aged persons not eligible for hospital insurance under the transitional provisions may participate voluntarily in the SMI program. To enroll prior to July 1, 1973, the person had to file a written request with the Social Security Administration during specified periods. To prevent loss of entitlement or delay, the 1972 amendments provide for automatic enrollment in SMI for persons as they become entitled to hospital insurance. An individual may decline SMI enrollment. If he or she withdraws before coverage starts, there is no premium liability, nor is the individual charged with an enrollment.

Individuals may enroll in the SMI program only during the initial and general enrollment periods. The initial enrollment period begins with the third month preceding the one in which an individual is first eligible and ends 3 months after the month of attainment, a total period of 7 months. If the person enrolls during the 3 months prior to the month in which he or she is first eligible, coverage is effective with the first month of eligibility; if he or she enrolls during the month of eligibility, coverage begins the following month; if he or she enrolls in any of the 3 months after eligibility, coverage begins from 2 to 3 months after enrollment, depending on how long the person waited before enrolling.

Beginning with 1969, SMI general enrollment periods are from January 1 through March 31 of each year for those who did not enroll in their initial enrollment period or those who previously terminated their enrollment and wish to re-enroll. A person who enrolls during general enrollment period is covered under SMI beginning with July 1 of the year in which he or she enrolls. Prior to the 1972 amendments, an eligible individual had to enroll within 3 years after the end of the initial enrollment period or within 3 years after termination of prior enrollment. The 3-year limitation is no longer applicable. Re-enrollment is allowed only once.[11]

A State may enroll eligible aged and disabled individuals who receive cash payments under State supplementary income or State supplementation programs or who are otherwise eligible for medical assistance under Title XIX if 1) prior to January 1, 1970, the State requested that a State-Federal enrollment agreement be established, and 2) the State pays the necessary premiums.

[11]The Omnibus Reconciliation Act of 1980 (P.L. 96-499) removed any limits on the number of times a person may re-enroll for SMI.

For a person 65 years of age and over, enrollment terminates with the beginning of the month following the month of death. For the disabled person, coverage terminates with the end of entitlement to benefits based on disability. For a person with ESRD, coverage ends 36 months after he or she has a transplant or stops dialysis treatment. Otherwise, social security and railroad retirement beneficiaries may give notice of their desire to withdraw from the SMI program at any time; their coverage is terminated at the close of the following calendar quarter. Other enrolled persons may terminate their coverage by withholding payment of premiums or by notifying the Social Security Administration in writing of their desire to withdraw from the program. The beneficiary is provided a 90-day grace period for the payment of overdue premiums, after which coverage is automatically terminated. The 1972 amendments extend the 90-day grace period for an additional 90 days when the Secretary finds there is a good cause for failure to pay the premium before the end of the initial grace period.

Financing the Program

Hospital Insurance

The hospital insurance program is financed primarily through a tax on a portion of current earnings in employment covered under the Social Security Act. The maximum amount of annual earnings to which the tax is applied began at $6,600 for calendar year 1966; it increased to $7,800 effective with 1968 and $9,000 effective with 1972. The 1977 amendments established an automatic adjustment procedure for determining maximum annual earnings based on rising wages. The maximum earnings amount was $17,700 for 1978.

The same tax rate applies to employees, employers, and self-employed persons. The rate was 0.60 percent for each year 1968 to 1972. The scheduled rate for 1973 was 1.00 percent, 0.9 percent for 1974 to 1977, 1.00 percent for 1978, and 1.05 percent for 1979. Rates increase for future years up to 1.45 percent for 1986 and thereafter. The proceeds of this tax and monies collected from the railroad retirement system (with respect to the coverage of railroad retirement beneficiaries) are placed in the Federal hospital insurance trust fund from which reimbursement for all benefits and administrative expenses incurred under the hospital insurance program is made. The hospital insurance trust fund is reimbursed from general tax revenues for the cost of providing coverage for persons who qualify for hospital insurance under the transitional provisions. Amounts paid for hospital insurance coverage by persons voluntarily paying the premiums are deposited in the hospital insurance trust fund.

Supplementary Medical Insurance

The revenues of the Federal supplementary medical insurance (SMI) trust funds are derived from premiums paid by those persons enrolled for supplementary medical insurance (or on their behalf), contributions by the Federal Government from general revenues, and interest on funds deposited with the Treasury. Benefits and administrative costs are paid from monies in the Federal SMI trust fund.

The premiums of persons receiving social security cash benefits, railroad retirement, or Federal civil service annuities are deducted from their monthly benefit checks. Persons not receiving monthly benefits are billed quarterly for premiums by the Health Care Financing Administration or the Railroad Retirement Board and have a 90 day grace period in which to make payment. A person is given an additional 90 days to pay the premium when the Secretary finds there is a good cause for failure to pay the premium before the end of the initial 90 day grace period. Premiums may be paid for as long as a year in advance. For individuals financially unable to make quarterly payments, arrangements can be made for monthly payments.

Amount of Premium

The Secretary of DHHS is directed by law to determine the SMI premium rate on an annual basis. The dollar amount, prior to the amendments of 1972, was required to be sufficient to produce revenue equal to one-half the expected benefit and administrative costs payable under SMI during the period in which the rate applied. Between 1966 and 1972, the premium increased from $3.00 to $5.80 a month. The 1972 amendments made changes in the method of premium determination. The rate is to be determined in December of each year and is applicable for 12 months beginning the following July. It will be increased only if social security cash benefits increase. The percentage increase in the premium in any given year may not exceed the percentage increase in cash benefits. Further, the rate must be determined so that the revenue produced does not exceed, but may be less than, one-half the expected SMI costs. When the premium revenue is less than half the expected SMI costs, the difference is paid by the Federal Government from general revenues. The monthly rate was $8.20 effective July 1978 and increased to $8.70 in July 1979.

Administration of the Program

Hospital Insurance

Under the HI program, groups or associations of providers, on behalf of their members, may nominate a national, State, or other public or private agency or organization to serve as an intermediary in the claims process. A member of an association is free, however, to receive payment from an approved intermediary other than its association's nominee if approved by the Secretary and acceptable to the intermediary selected. In addition, a provider may deal directly with the Health Care Financing Administration.

The Secretary may enter into an agreement with a nominated organization if it is consistent with effective and efficient administration of the hospital insurance program. Under the agreement, the intermediary determines the provider's reasonable costs for items and services covered under the program, makes payment, and assists in the application of safeguards against unnecessary use of covered services. The agreement may also call for (1) furnishing consultative services to assist providers to establish and maintain necessary fiscal records and otherwise qualify as providers of services; (2) serving as a center for communicating with providers; and (3) making audits of provider records. Hospital insurance intermediaries also make payments for home health and outpatient hospital services covered under medical insurance.

Under the law, the reasonable costs of services are determined pursuant to regulations established by the Secretary of DHHS. These regulations prescribe the method(s) used to determine costs and the items to be included; they take into account both direct and indirect patient care costs (Code of Federal Regulations, Title 42, Chapter IV: Subpart D: Revised as of October 1, 1980). Requests for Medicare payment for covered services generally are submitted by the provider of services; they must be signed by the beneficiary (or someone for him/her if the beneficiary is unable to do so). The provider is reimbursed on the basis of reasonable costs of covered services and bills the beneficiary for deductible and coinsurance amounts as well as for services not covered by the program.

In some instances, hospitals may bill the program on a physician's behalf for services rendered to inpatients. In these cases, payment is made by the HI intermediary. For this type of billing, funds are transferred from the SMI trust fund to the HI trust fund to cover the cost of these services.

The intermediary selected by the provider reviews claims for payment and pays the provider. Actual payment for individual claims is made on the basis of an interim rate established between the provider and the intermediary. Final settlement for each provider's operating year is made on the basis of a cost report submitted by the provider and subject to an independent audit.

No payment can be made to Federal facilities except for emergency services, unless the provider serves as a community institution. In addition, payment cannot be made to a provider for those services it is obligated to render at public expense under Federal law or contract.

Supplementary Medical Insurance

Under the SMI program, the Secretary of DHHS may contract with carriers for the performance of specified administrative functions. The carrier's principal function is to determine whether charges are allowable (reasonable) and to make payment. Carriers also have the authority and responsibility to determine, in a given case, whether a claim is for a covered service and to deny claims for noncovered or excluded items or services. In addition, carriers assist in applying safeguards against unnecessary use of services.

The allowable charge, on which the Medicare SMI payment is based, may not exceed the lowest of (1) the physician's or supplier's customary charge for the service, (2) the prevailing charge in the locality for similar services, or (3) the charge applicable for comparable services under comparable circumstances to the policyholders or subscribers of the carrier. The 1972 amendments provided that increases in the prevailing charge levels would be limited by an economic index furnished by the Health Care Financing Administration to all carriers. The economic index relates physicians' fee increases to increases in physicians' practice expenses and increases in the general earnings level.

Allowable charges are updated annually to take into account the actual charges physicians and suppliers have billed for covered services in the preceding calendar year. The revised allowable charge levels go into effect on July 1 of each year or as soon thereafter as they can be incorporated into the carrier's payment system. Thus, for the 12-month period beginning July 1, 1980, allowable charge levels were calculated from actual charge levels for calendar year 1979. However, allowable charges may not exceed the upper limit of the prevailing charges set by law at the 75th percentile of customary charges (weighted by frequency) made for similar services.

Claims for payment of SMI benefits may be submitted to the carrier either by the patient or by the physician or other supplier of services. If the patient submits a claim (an itemized bill) directly to the carrier, he or she receives direct payment of benefits for covered services: the patient remains responsible for the physician's (or supplier's) bill. If a physician or supplier agrees to accept the allowed or reasonable charge detemined by the carrier as the total charge, the physician or supplier submits the bill and is reimbursed. The patient remains responsible for the remaining 20 percent of the allowed charges for covered services and the applicable deductible.

Services furnished by group practice prepayment plans (GPPPs) to members are normally rendered in return for predetermined premium payments. In these cases, Medicare reimbursement is made directly to the GPPP. A GPPP which exercises the option provided by law to be paid 80 percent of the reasonable cost of services (in lieu of 80 percent of the allowed charge for such services) generally deals directly with the Health Care Financing Administration. Plans which choose to be paid on the basis of allowed charges are reimbursed by the SMI carrier.

For bills incurred in the SMI portion of the program after March 1968, claims must be filed no later than the close of the calendar year following the year in which the services are furnished. For services provided during the last 3 months of the calendar year, bills may be submitted through the end of the second year following.

Health Maintenance Organizations

The 1972 amendments enabled health maintenance organizations (HMOs) to receive reimbursement from Medicare on a capitation basis for both HI and SMI services. An HMO is an organization which provides to enrolled persons, either directly or by arrangement with others, comprehensive health services on the basis of a periodic rate without regard to the frequency or extent of services furnished to a particular beneficiary. For Medicare purposes, an HMO must provide all of the Medicare covered services generally available in its service area.

Prior to the 1972 amendments, HMO-type plans could be reimbursed under Medicare on a capitation basis only for the costs of providing physicians' and related SMI services. Plans that also provided inpatient hospital, skilled nursing facility, and home health care as covered benefits to their members billed Medicare through intermediaries and carriers on a fee-for-service basis the same as any other provider. Plans that do not choose or cannot qualify to participate under the HMO option may continue to receive Medicare reimbursement on this basis under the group practice prepayment plan (GPPP) regulations.

Plans that do not choose to participate under either HMO or GPPP regulations may continue to bill Medicare, through carriers and intermediaries, for all Medicare covered services provided to their members who are Medicare beneficiaries. The majority of the existing plans are in this category.

Appendix C. Sources and Limitations of Data

The data shown in this report were derived from the master inpatient stay record statistical file. This file is generated by linking information from three HCFA master program files for a 20-percent sample of Medicare beneficiaries. Whenever a beneficiary in the sample completes a period of hospitalization, the following process takes place to create a statistical discharge record for the file; first, information is taken from the billing form HCFA-4, (Figure 6) for inpatient services submitted for payment by participating short-stay hospitals. After a discharge bill has been received and processed to the central hospital bill master file in HCFA, a statistical discharge record is created for a 20-percent sample of HI beneficiaries. The discharge record consists of one or more bills depending on the length of stay and hospital billing procedures. Data selected from the bill for the statistical discharge record include primary diagnosis, surgical procedure, discharge status, length of stay, services provided, charges rendered, and amounts reimbursed.

Secondly, this record is matched to the Health Insurance Entitlement (HIE ' aster file which identifies each aged person eligible for HI benefits. Beneficiary characteristics such as age, race, sex, and residence are selected from the HIE file and merged with the data describing the beneficiary's period of hospitalization.

Finally, the statistical discharge record is matched to the Provider of Services (POS) master file, which contains information about the hospital from which the patient was discharged. The data selected include such hospital characteristics as size, ownership, teaching status, and number of facilities and services available.

The statistical discharge record produced by these three steps provides information on the patient, the hospital, and the hospitalization. Accumulation of these records for all beneficiaries in the 20-percent sample results in creation of the master stay record file.

The data in this report are based on short-stay hospital discharges included in the 20-percent master inpatient stay record files. The sample counts have been multiplied by five to give an estimate of the total number of discharges. Discharges in 1978, for example, comprise a sample of enrollees discharged in that year. It includes enrollees whose hospital stay began in 1977 and were discharged in 1978.

Three types of limitations should be considered when analyzing the data shown in this report: sampling variability, exclusions, and time lag.

The data presented in this report are based on short-stay hospital discharge records contained in the 20-percent statistics file. Therefore, the data are subject to sampling variability. See Appendix D for a description of the sampling variability associated with the short-stay hospital data shown in this report.

Several types of discharges are currently excluded from processing. These represent emergency admissions to short-stay hospitals not participating in the Medicare program, and discharges from rehabilitation hospitals and distinct parts of long-term care facilities.

Perhaps the most important limitation to be considered is the incompleteness of the 1978 statistical file resulting from the administrative time lag between the time when a bill (HCFA-1453) is submitted for payment and when it is posted to the central records. The processing cut-off date for this report was December 1979; 1,978 discharges recorded after that date were not included. A complete count of all aged Medicare discharges from short-stay hospitals during 1978 will probably be about 1 to 2 percent more than the figures used in this study. As a result, the corresponding figures shown for days of care, charges, amounts reimbursed, and utilization rates are understated by about the same extent. However, since data for earlier years used the same processing procedures, year-to-year comparisons are appropriate.

Payments under the HI program shown in this report reflect reimbursements based on interim rates, usually established as a *per diem* amount or in percentages of total charges. The final amount due each provider of medical services is determined after the end of his fiscal year on the basis of his audited, reasonable costs of operation.

The data shown by geographic area were summarized by the residence of the beneficiary, not the address of the hospital. Data totals include the 50 States, the District of Columbia, Puerto Rico, Virgin Islands, Foreign Countries, and other Outlying Areas.

Appendix D. Reliability of Estimates

Most of the data in this report are estimates based on a 20 percent sample of the enrolled population and hence are subject to sampling variability. Tables A to H enable the user to obtain approximate standard errors for most of the estimates in this report. The standard error is primarily a measure of sampling variability, that is, of the variation that occurs by chance because a sample rather than a whole population is used. To calculate the standard errors at a reasonable cost for the wide variety of estimates in this note, it was necessary to use approximation methods. Thus, these tables should be used only as indicators of the the order of magnitude of the standard errors for specific estimates. In general, small estimates, estimates for small subgroups, and percentages or means with small bases tend to be relatively unreliable.

TABLE A
Approximate Standard Error of Estimated Number of Discharges and Estimated Number of Persons Using Services

Discharges or Persons	Standard Error	
	Discharges	Persons
100	31	20
200	44	28
300	53	35
500	69	45
700	81	53
1,000	97	63
2,000	140	89
3,000	170	110
5,000	210	140
7,000	250	170
10,000	300	200
20,000	420	280
30,000	510	350
50,000	660	450
70,000	780	530
100,000	920	630
200,000	1,300	890
300,000	1,600	1,100
500,000	2,000	1,400
700,000	2,400	1,700
1,000,000	2,900	2,000
2,000,000	4,000	2,700
3,000,000	4,900	3,300
5,000,000	6,300	4,000
7,000,000	7,400	4,600
10,000,000	8,800	5,000

FIGURE 6

INPATIENT HOSPITAL AND SKILLED NURSING FACILITY ADMISSION AND BILLING

HOSPITAL AND MEDICAL INSURANCE BENEFITS—SOCIAL SECURITY ACT

Form Approved
OMB No. 066-R0014

NOTICE: Anyone who misrepresents or falsifies essential information requested by this form may upon conviction be subject to fine and imprisonment under Federal law

1. Patient's last name	First name	MI	2. Sex ☐ M ☐ F	3. Health insurance claim number
4. Patient's address (Street number, City, State, ZIP Code)			5. Date of birth	6. Medical record number
7. Date of this admission	8. Provider name and address (City and State)		9. Provider number	10. Attending physician
11. Dates of qualifying stay FROM / THRU	12. Qualifying and other prior stay information			

If you have other health insurance or if your State Medical Assistance Agency will pay part of your medical expenses and you want information about this claim released to them upon their request, complete items 13 and 14.

13. Insuring organization and / or State agency name and address	14. Policy and / or medical assistance number

15. Patient's Certification, Authorization to Release Information, and Payment Request. I certify that the information given by me in applying for payment under Title XVIII of the Social Security Act is correct. I authorize any holder of medical or other information about me to release to the Social Security Administration or its intermediaries or carriers any information needed for this or a related Medicare claim. I request that payment of authorized benefits be made on my behalf.

☐ Contained in provider's record	Signature (Patient or authorized representative) (Signature by mark must be witnessed)	Date

16. Admitting diagnoses (If employment related, also give name and address of employer)	Do not use this space	17. Discharge or current diagnoses (a) Primary (b) Secondary	Do not use this space
18. Surgical procedures (Show date of each)			

19. STATEMENT OF SERVICES RENDERED	Blood pints furnished A.	Pints replaced	Not replaced	Charge per pint	Total Charges		Non-covered Chg's.	
Accommodation			Days	Rate				
B. 1-Bed								
C. 2-3-4 Bed								
D. 5 or more Beds								
FOR HOSPITAL ONLY E. Intensive care								
F. Coronary care								
G.								
H. Operating room								
I. Anesthesia								
J. Outpatient services								
K. Blood administration								
L. Pharmacy								
M. Radiology								
N. Laboratory								
O. Medical, surgical and central supplies								
P. Physical therapy								
Q. Occupational therapy								
R. Speech pathology								
S. Inhalation therapy								
T. Other (Describe)								
U. TOTALS								
V. Inpatient deductible								
W. Blood deductible pts. @								
X. Coinsurance days ( ) ( )								
Y. TOTAL DEDUCTIONS								

20. Statement covers period FROM	THRU
21. Date guarantee of payment began	22. Date UR notice received
23. Date active care ended	24. Date benefits exhausted

25. Patient status

A. Date discharged	B. Date of death	C. ☐ Still patient

26. Lifetime reserve days used	27. Non-covered days	28. Covered days

30. Remarks:

PIP
(a) ☐

31. Reimbursement amount $

29. I certify that the required physician's certification and recertifications are on file.

Signature of provider representative	Date received

FOR INTERMEDIARY USE

32. Verified non-covered stays From / Thru	33. Non-pmt. code	34. Days used

35. Approved by	Date approved

FORM HCFA-1453(6) (10-74) (FORMERLY SSA-1453(6))

Health Care Financing Administration

TABLE B
Approximate Standard Error of Estimated Days of Care

Estimated Days of Care	Standard Error
10,000	1,100
20,000	1,600
30,000	2,000
50,000	2,600
70,000	3,000
100,000	3,700
200,000	5,200
300,000	6,500
500,000	8,400
700,000	10,000
1,000,000	12,000
2,000,000	17,000
3,000,000	21,000
5,000,000	28,000
7,000,000	33,000
10,000,000	40,000
20,000,000	57,000
30,000,000	71,000
50,000,000	92,000
70,000,000	110,000
100,000,000	130,000

TABLE C
Approximate Standard Error of Estimated Charges or Reimbursement

Estimate Dollars	Standard Error
1,000,000	140,000
2,000,000	200,000
3,000,000	250,000
5,000,000	330,000
7,000,000	400,000
10,000,000	480,000
20,000,000	710,000
30,000,000	880,000
50,000,000	1,200,000
70,000,000	1,400,000
100,000,000	1,700,000
200,000,000	2,500,000
300,000,000	3,100,000
500,000,000	4,100,000
700,000,000	4,900,000
1,000,000,000	5,900,000
2,000,000,000	8,700,000
3,000,000,000	11,000,000
5,000,000,000	14,000,000
7,000,000,000	17,000,000
10,000,000,000	21,000,000
20,000,000,000	30,000,000
30,000,000,000	38,000,000

TABLE D
Approximate Standard Error of Days Per Discharge

Days Per Discharge	Base of Rate (discharges in thousands)											
	.50	.70	1.0	2.0	3.0	5.0	7.0	10	20	30	50	70
5	.79	.67	.57	.41	.34	.26	.22	.19	.14	.11	.087	.075
6	.87	.74	.62	.45	.37	.29	.24	.21	.15	.12	.095	.081
7	.94	.80	.68	.48	.40	.31	.26	.22	.16	.13	.10	.088
8	1.0	.87	.73	.52	.43	.33	.28	.24	.17	.14	.11	.094
9	1.1	.93	.78	.56	.46	.36	.30	.26	.18	.15	.12	.10
10	1.2	1.0	.84	.60	.49	.38	.32	.27	.19	.16	.13	.11
12	1.3	1.1	.95	.68	.55	.43	.37	.31	.22	.18	.14	.12
14	1.5	1.3	1.1	.76	.62	.48	.41	.34	.24	.20	.16	.13
16	1.7	1.4	1.2	.84	.69	.53	.45	.38	.27	.22	.17	.14
18	1.9	1.6	1.3	.93	.76	.59	.50	.42	.29	.24	.19	.16
20	2.0	1.7	1.4	1.0	.83	.64	.54	.45	.32	.26	.20	.17
22	2.2	1.9	1.6	1.1	.90	.70	.59	.49	.35	.28	.22	.19
24	2.4	2.1	1.7	1.2	.98	.76	.64	.53	.38	.31	.24	.20
26	2.6	2.2	1.8	1.3	1.1	.82	.69	.57	.40	.33	.26	.22
28	2.8	2.4	2.0	1.4	1.1	.88	.74	.62	.43	.35	.27	.23
30	3.0	2.6	2.1	1.5	1.2	.94	.79	.66	.46	.38	.29	.25

	100	200	300	500	700	1,000	2,000	3,000	5,000	7,000	10,000
5	.063	.045	.037	.029	.025	.021	.015	.012	.010	.0083	.0070
6	.068	.049	.041	.032	.027	.023	.016	.014	.011	.0090	.0076
7	.074	.053	.044	.034	.029	.025	.018	.015	.011	.0097	.0082
8	.079	.057	.047	.036	.031	.026	.019	.015	.012	.010	.0087
9	.084	.060	.050	.039	.033	.028	.020	.016	.013	.011	.0092
10	.089	.064	.052	.041	.035	.029	.021	.017	.014	.012	.0097
12	.10	.071	.058	.046	.039	.033	.023	.019	.015	.013	.011
14	.11	.078	.060	.050	.043	.036	.026	.021	.016	.014	.012
16	.12	.086	.070	.055	.047	.039	.028	.023	.018	.015	.013
18	.13	.094	.077	.060	.051	.042	.030	.025	.019	.016	.014
20	.14	.10	.083	.065	.055	.046	.033	.027	.021	.018	.015
22	.16	.11	.090	.070	.059	.049	.035	.029	.022	.019	.016
24	.17	.12	.097	.075	.063	.053	.037	.031	.024	.020	.017
26	.18	.13	.10	.080	.068	.057	.040	.033	.025	.021	.018
28	.19	.14	.11	.085	.072	.060	.043	.035	.027	.023	.019
30	.21	.14	.12	.091	.077	.064	.045	.037	.029	.024	.020

TABLE E
Approximate Standard Error of Charges or Reimbursement Per Discharge

Dollars Per Discharge	Base of Rate (discharges in thousands)											
	.5	.7	1	2	3	5	7	10	20	30	50	70
$ 300	$ 73	$ 63	$ 54	$ 40	$ 33	$ 26	$ 23	$ 19	$ 14	$ 12	$ 9.5	$8.2
500	92	79	67	50	41	33	29	24	18	15	12	10
700	110	92	78	58	48	38	33	28	21	17	14	12
1,000	130	110	93	68	57	45	39	33	24	20	16	14
2,000	200	170	140	100	85	67	57	48	35	29	23	20
3,000	280	240	200	140	120	90	76	64	46	38	30	25
4,000	370	310	260	180	150	120	98	82	58	47	37	31
5,000	470	390	330	230	190	140	120	100	71	58	45	38

	100	200	300	500	700	1,000	2,000	3,000	5,000	7,000	10,000
$ 300	$7.0	$5.2	$4.3	$3.4	$2.9	$2.5	$1.8	$1.5	$1.2	$1.1	$.90
500	8.8	6.5	5.4	4.3	3.7	3.2	2.3	1.9	1.5	1.3	1.1
700	10	7.5	6.2	5.0	4.3	3.7	2.7	2.3	1.8	1.5	1.3
1,000	12	8.7	7.3	5.8	5.0	4.3	3.1	2.6	2.1	1.8	1.5
2,000	17	12	10	8.0	6.9	5.9	4.3	3.6	2.9	2.5	2.1
3,000	21	15	13	10	8.6	7.3	5.3	4.4	3.5	3.0	2.5
4,000	26	19	16	12	10	8.7	6.3	5.2	4.1	3.5	3.0
5,000	32	23	18	14	12	10	7.4	6.1	4.8	4.1	3.4

TABLE F
Approximate Standard Error of Charges Per Day or Reimbursement Per Day

Dollars Per Day	Base of Rate (discharge in thousands)										
	10	20	30	50	70	100	200	300	500	700	1,000
$50	$5.3	$3.9	$3.3	$2.6	$2.2	$1.9	$1.4	$1.2	$.94	$.81	$.69
70	5.9	4.3	3.6	2.9	2.5	2.1	1.6	1.3	1.0	.90	.77
100	6.7	4.9	4.1	3.2	2.8	2.4	1.7	1.5	1.2	1.0	.85
200	11	7.6	6.2	4.9	4.2	3.5	2.5	2.1	1.7	1.4	1.2
300	16	12	9.5	7.4	6.3	5.3	3.8	3.1	2.4	2.1	1.7
400	23	16	13	10	8.8	7.4	5.3	4.3	3.4	2.8	2.4

	2,000	3,000	5,000	7,000	10,000	20,000	30,000	50,000	70,000	100,000
$50	$.51	$.43	$.34	$.29	$.25	$.18	$1.5	$.12	$.11	$.090
70	.56	.47	.38	.32	.28	.20	.17	.14	.12	.10
100	.63	.52	.42	.36	.31	.23	.19	.15	.13	.11
200	.87	.72	.57	.49	.41	.30	.25	.20	.17	.14
300	1.2	1.0	.80	.68	.57	.41	.34	.26	.23	.19
400	1.7	1.4	1.1	.92	.77	.55	.45	.35	.30	.25

TABLE G
Approximate Standard Error of Percent Distribution of Discharges

Percent	Base of Percentage (number of discharges in thousands)											
	2	5	10	25	50	100	250	500	1,000	3,000	5,000	8,000
1 or 99	.66	.42	.29	.19	.13	.093	.059	.042	.030	.018	.014	.012
2 or 98	.93	.58	.41	.26	.18	.13	.082	.059	.042	.025	.020	.017
5 or 95	1.4	.91	.64	.41	.29	.20	.13	.091	.065	.039	.031	.026
10 or 100	2.0	1.3	.88	.56	.39	.28	.18	.13	.089	.054	.043	.036
15 or 85	2.4	1.5	1.1	.66	.47	.33	.21	.15	.11	.064	.051	.042
20 or 80	2.6	1.7	1.2	.74	.53	.37	.24	.17	.12	.071	.057	.047
30 or 70	3.0	1.9	1.4	.85	.60	.43	.27	.19	.14	.081	.065	.053
40 or 60	3.2	2.0	1.4	.91	.64	.46	.29	.20	.15	.086	.068	.056
50	3.3	2.1	1.5	.93	.66	.47	.29	.21	.15	.087	.069	.056

TABLE H
Approximate Standard Error of Percent Distribution of Days of Care

Percent	Base of Percentage (total days of care in thousands)											
	10	50	100	300	500	1,000	3,000	5,000	10,000	30,000	50,000	90,000
1 or 99	1.1	.51	.36	.22	.17	.12	.072	.057	.041	.025	.020	.016
2 or 98	1.9	.71	.51	.30	.24	.17	.10	.080	.058	.035	.028	.022
5 or 95	2.4	1.1	.80	.47	.37	.27	.16	.12	.090	.055	.044	.034
10 or 90	3.3	1.5	1.1	.65	.51	.37	.22	.17	.12	.075	.060	.047
15 or 85	3.9	1.8	1.3	.77	.60	.43	.26	.20	.15	.089	.071	.055
20 or 80	4.3	2.0	1.5	.86	.68	.49	.29	.23	.16	.099	.079	.062
30 or 70	4.9	2.3	1.7	.98	.77	.55	.33	.26	.19	.11	.090	.070
40 or 60	5.3	2.4	1.8	1.0	.82	.59	.35	.28	.20	.12	.095	.073
50	5.3	2.5	1.8	1.1	.83	.60	.36	.28	.20	.12	.096	.074

Appendix E. Definition of Terms

Short-stay hospital: General and special hospitals certified as participating facilities under Medicare and reporting average stays of less than 30 days.

Personal Characteristics:

Age: Completed years at last birthday in month of admission to hospital.

Race: White, all other races, or race unknown as entered into the Health Insurance Entitlement (HIE) master file from basic records completed by the primary beneficiary. Race unknown, whether or not specifically indicated in a table, is included in the "all persons" or equivalent totals.

Sex: As designated in the Health Insurance Entitlement master file.

Geographic classifications: Based on the address to which the enrollee's social security benefit check is being mailed or the mailing address recorded in the HIE master file at the time the bill is processed by the Health Care Financing Administration regardless of the reference date of the table.

All areas: Consists of the United States, Guam, Puerto Rico, Virgin Islands, and all other outlying areas.

United States: Consists of the 50 States and the District of Columbia.

Hospital control:

Voluntary-church: Hospitals whose governing authority is a nonprofit religious organization. For "Catholic" hospitals, this organization can be either a national or international nursing order, or the local ecclesiastical authority, i.e., the local bishop.

Voluntary-other: Hospitals whose governing authority is a nonprofit organization other than a religious one.

Proprietary: Hospitals whose governing authority is an individual, partnership, or profit-making corporation.

Government: Hospitals whose governing authority is a unit of government. The unit may be a State, county, or city, or a city and county government jointly, or a hospital district established by a State agency. Federal hospitals have only limited participation in the program. Except under special circumstances, they are authorized only to furnish emergency services.

Bed size: Number of adult beds regularly available for use by inpatients. This excludes bassinets and pediatric beds.

Surgery: Includes any operative procedures recorded on the patient's billing form defined as surgery in the First Edition of the current *Procedural Terminology (CPT)* manual published by the American Medical Association. This includes procedures involving incision, excision, amputation, introduction, endoscopy, repair, destruction, suture, or manipulation. When two or more surgical procedures appear on the bill, the first listed surgical procedure is coded.

Discharge: The formal release of an inpatient from a hospital. All discharges including those for person who died during their hospitalization are included. In this report, unless otherwise stated, the number of patients refers to the number of discharges during the year including any multiple discharges of the same person.

Days of care: A day during which inpatient hospital services were furnished to a person eligible for HI benefits under Medicare who was discharged during the period January 1—December 31 of each year.

Reimbursement: Payments under the HI program which are shown in this report are based on interim reimbursement rates established to reflect costs as closely as possible, usually established as a per diem amount or on percentages of total charges. Figures shown exclude amounts for which the patient is responsible such as deductibles, coinsurance, and charges for noncovered services. The final amount of reimbursement due under Medicare to each provider of medical services is determined after the end of the fiscal year on the basis of the provider's audited reasonable costs of operation.

Length of stay: The number of days of care for a discharge. The day of discharge is not counted as a day of care. A hospitalization of less than 1 day, i.e., the patient is admitted and discharged on the same day, is counted as 1 day.

Hospital charges: The hospital's charges for room, board, and ancillary services as recorded on the billing form.

Annual rates per 1,000 enrollees: A ratio of the total number of discharges, days of care, or persons served (multiplied by 1,000) to the number of persons entitled to benefits on July 1 of that year.

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